D-190/191/191SR/192CK/193

SERVICE MANUAL

Ver 1.0 1999. 02

Photo: D-191

US Model
D-191/192CK/193
Canadian Model
D-191
AEP Model
UK Model
D-190/191/191SR/192CK/193
E Model
Australian Model
D-191/192CK/193
Chinese Model
D-191/193

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM-2811DAA
Optical Pick-up Name	DAX-11D

SPECIFICATIONS

CD player

System
Compact disc digital audio system

Laser diode properties
Material: GaAlAs
Wave length: λ = 780 nm
Emission duration: Continuous
Laser output: Less than 44.6 µW (This output is the value measured at a distance of 200 mm from the objective lens surface on the optical pick-up block with 7 mm aperture.)

Error correction
Sony Super Strategy Cross Interleave Reed Solomon Code

D-A conversion
1-bit quartz time-axis control

Frequency response
20 - 20,000 Hz +1/–3 dB
(measured by EIAJ CP-307)

Output (at 4.5 V input level)
Headphones (stereo minijack)
Approx. 5 mW + approx. 5 mW at 16 ohms
(Approx. 2 mW + approx. 2 mW at 16 ohms*)
*For the customers in France

General

Power requirements
For the area code of the model you purchased, check the upper left side of the bar code on the package.
- Sony NC-DMAA rechargeable battery: 2.4 V DC, Ni-Cd, 700 mAh (D-193)
- Two LR6 (size AA) batteries: 3 V DC
- AC power adaptor (DC IN 4.5 V jack):
  US/CND/E92/MX model: 120 V, 60 Hz
  AEP/FR/EE/E13/G model: 220 - 230 V, 50/60 Hz
  UK model: 230 - 240 V, 50 Hz
  EA model: 110 - 240 V, 50/60 Hz
  AUS model: 240 V, 50 Hz
  JEW/E33 model: 100 - 240 V, 50/60 Hz
  HK model: 220 V, 50/60 Hz
  CH/AR model: 220 V, 50 Hz
- Sony DPM-300P mount plate for use on car battery: 4.5 V DC

Dimensions (w/h/d) (without projecting parts and controls)
Approx. 131 × 28 × 148 mm
(5 1/4 × 1 1/9 × 5 4/5 in.)

Mass (without rechargeable batteries)
Approx. 220 g (7.8 oz.)

Operating temperature
5°C - 35°C (41°F - 95°C)

– Continued on next page –

COMPACT DISC COMPACT PLAYER

MICROFILM

SONY®

Supplied accessories

For the area code of the model you purchased, check the upper left side of the bar code on the package.

D-190

Earphones (1)
Connecting cord (Phono plug × 2 ↔ stereo miniplug) (1)

D-191

AC power adaptor (1)
Headphones (1)*1
Earphones (1)*2
Connecting cord (Phono plug × 2 ↔ stereo miniplug) (1)*3
AC plug adaptor (1)*4
*1 Supplied with US and CND models
*2 Not supplied with US and CND models
*3 Not supplied with US model
*4 Supplied with E33, E13, and EA models

D-191SR

AC power adaptor (1)
Earphones (1)
Active speakers (SRS-A5) (1)

D-192CK

AC power adaptor (1)
Headphones (1)*1
Earphones (1)*2
Connecting cord (Phono plug × 2 ↔ stereo miniplug) (1)*2
Car connecting pack (1)
Car battery cord (1)
Mount plate (1)
Velcro tape (2)
Spare fuse (1)
Spiral tube (1)
AC plug adaptor (1)*3
*1 Supplied with US model
*2 Not supplied with US model
*3 Supplied with E33, E13, and EA models

D-193

AC power adaptor (1)
Headphones (1)*1
Earphones (1)*2
Rechargeable batteries (2)
Connecting cord (Phono plug × 2 ↔ stereo miniplug) (1)*2
AC plug adaptor (1)*3
*1 Supplied with US model
*2 Not supplied with US model
*3 Supplied with E33, E13, and EA models

Design and specifications are subject to change without notice.

• Abbreviation
AR : Arabic model
AUS : Australian model
BR : Brazilian model
CH : Chinese model
CND : Canadian model
E13 : AC 220-230V area in E model
E33 : AC 100-240V area in E model
E92 : AC 120V area in E model
EA : Saudi Arabia model
EE : East European model
FR : French model
G : German model
MX : Mexican model

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT table is located on the bottom exterior.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

"La Fiesta" model

The "La Fiesta" model is same as the E13, E33 or E92 models except for upper lid assy and individual carton.
See page 26 for part No. of upper lid assy, page 31 for part No. of individual carton.

- E13 : AC 220 - 230V area in E model
- E33 : AC 100 - 240V area in E model
- E92 : AC 120V area in E model

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

TABLE OF CONTENTS

1. SERVICE NOTE 3

2. GENERAL 4

3. DISASSEMBLY
3-1. Cabinet (Rear) Sub Assy 5
3-2. Main Board 5
3-3. MD Assy 5

4. ELECTRICAL ADJUSTMENTS 6

5. DIAGRAMS
5-1. IC Pin Descriptions 7
5-2. Block Diagram 9
5-3. Printed Wiring Board 12
5-4. Schematic Diagram –Main Section (1/2)– 15
5-5. Schematic Diagram –Main Section (2/2)– 17

6. EXPLODED VIEWS
6-1. Cabinet Section 20
6-2. MD Section 22

7. ELECTRICAL PARTS LIST 23

SECTION 1
SERVICE NOTE

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

Before Replacing the Optical Pick-Up Block

Please be sure to check throughly the parameters as par the "Optical Pick-Up Block Checking Procedures" (Part No.: 9-960-027-11) issued separately before replacing the optical pick-up block.
Note and specifications required to check are given below.

- FOK output : IC501 ㉕ pin
  When checking FOK, remove the lead wire to disc motor.
- S curve P-to-P value : 2.0Vp-p IC501 ㊽ pin
  When checking S curve P-to-P value, remove the lead wire to disc motor.
- RF signal P-to-P value : 0.6 - 1.3Vp-p
- Traverse signal P-to-P value : 0.8 - 2.8Vp-p
- The repairing grating holder is impossible.

Precautions for Checking Emission of Laser Diode

Laser light of the equipment is focused by the objective lens in the optical pick-up so that the light focuses on the reflection surface of the disc.
Therefore, be sure to keep your eyes more than 30 cm apart from the objective lens when you check the emission of laser diode.

Laser Diode Checking Methods

During normal operation of the equipment, emission of the laser diode is prohibited unless the upper lid is closed while turning ON the S808 (push switch type).
The following checking method for the laser diode are operable.

Emission of the laser diode is visually checked

1. Open the upper lid.
2. Push the S808 as shown in Fig. 1.
3. Check the objective lens for confirming normal emission of the laser diode. If not emitting, there is a trouble in the automatic power control circuit or the optical pick-up.
   During normal operation, the laser diode is turned ON about 2.5 seconds for focus searching.

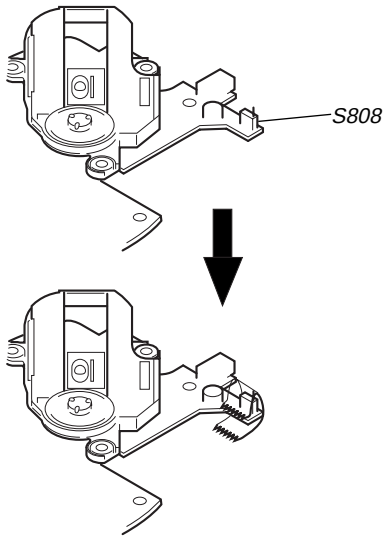


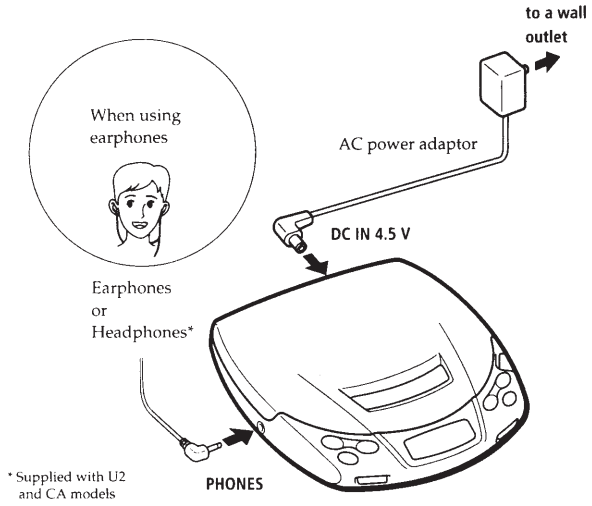
Fig. 1 Method to push the S808

This section is extracted from instruction manual.

Playing a CD right away!

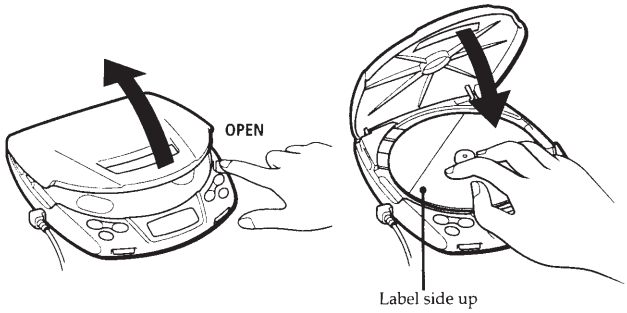
If you want to play a CD right now, choose to use your player on house current. Other choices are the following two: dry batteries (see "Power Sources" on the reverse side) and car battery.

1 Connect



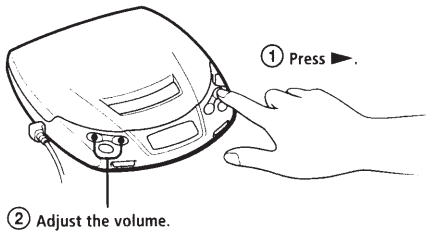
For models supplied with the AC plug adaptor
If the AC power adaptor does not fit the wall outlet, use the AC plug adaptor.

2 Place a CD



① Press OPEN to open the lid.
② Fit the CD to the pivot.
③ Close the lid.

3 Play



To stop play, press ■.

Note
If you press ■, the setting of the volume will be canceled. Whenever you play a CD, set it again by pressing VOL + or –.

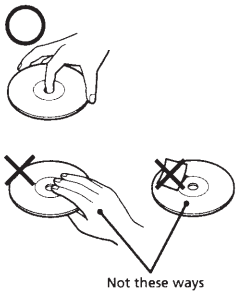
To	Press
Find the beginning of the current track (AMS*)	⏮ once
Find the beginning of previous tracks (AMS)	⏮ repeatedly**
Find the beginning of the next track (AMS)	⏭ once
Find the beginning of succeeding tracks (AMS)	⏭ repeatedly***
Go forward quickly	Hold down ⏭
Go backwards quickly	Hold down ⏮

* AMS = Automatic Music Sensor
** When using ⏮: previous track → previous track ..... first track → last track .....
*** When using ⏭: next track → next track ..... last track → first track → second track .....

To remove the CD
Remove the CD while pressing the pivot.

Notes on display
- When you press ►, the total number of tracks in the CD and the total playing time appear.
- During play, the track number and the elapsed playing time of the current track appear.
- Between tracks, the time to the beginning of the next track will appear with the "–" indication.

Notes on handling CDs
- To keep the CD clean, handle it by its edge. Do not touch the surface.
- Do not stick paper or tape onto the CD.
- Do not expose the CD to direct sunlight or heat sources such as hot air ducts. Do not leave the CD in a car parked under direct sunlight.

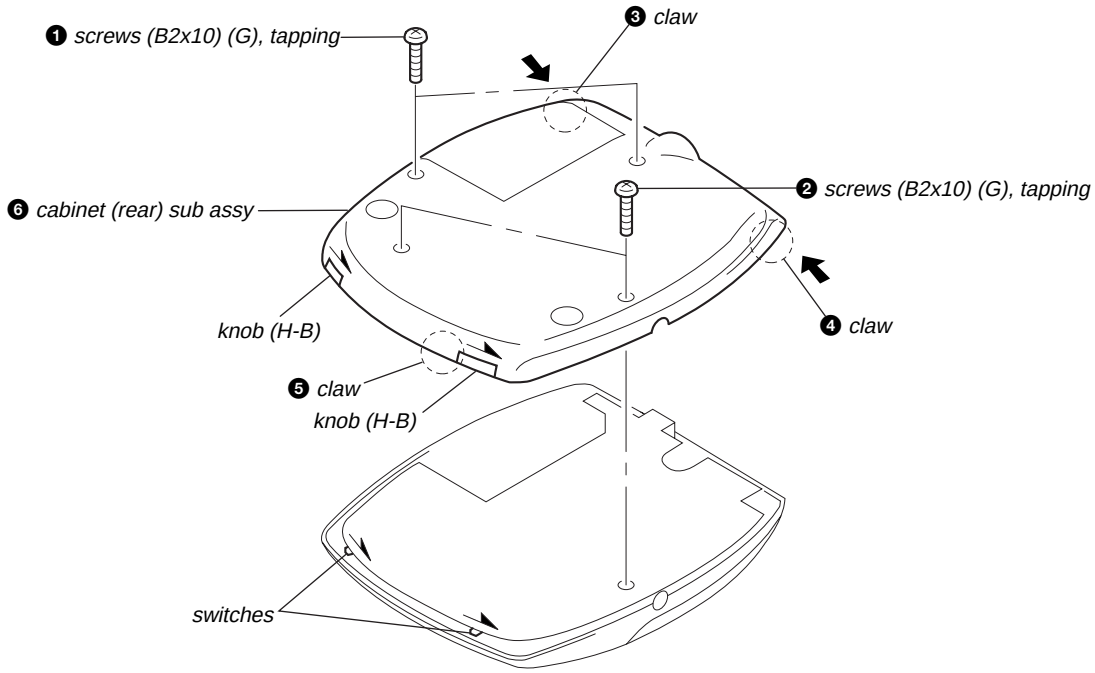


SECTION 3
DISASSEMBLY

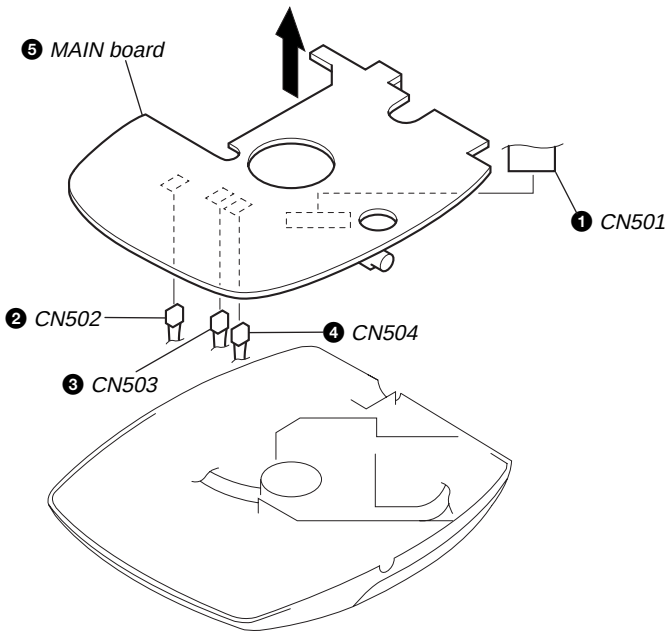
Note : Follow the disassembly procedure in the numerical order given.

3-1. CABINET (REAR) SUB ASSY

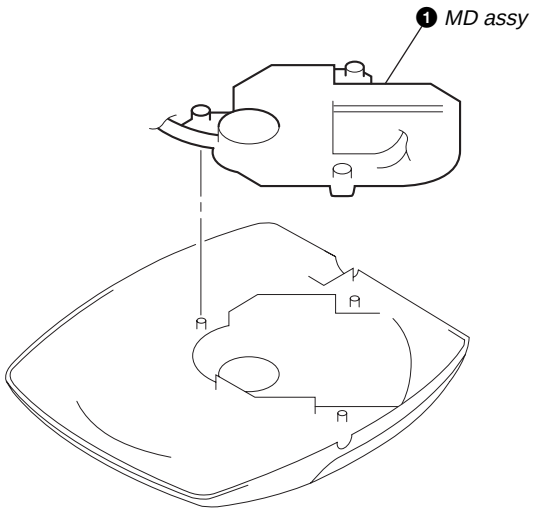
Note : When installing, fit the knobs (H-B) and switches.



3-2. MAIN BOARD



3-3. MD ASSY



SECTION 4
ELECTRICAL ADJUSTMENTS

CD SECTION

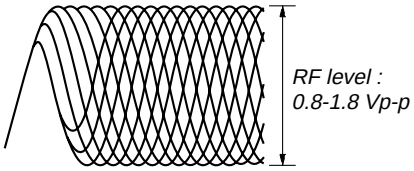
CD section adjustments are done automatically in this set.
In case of operation check, confirm that focus bias.

FOCUS BIAS CHECK

1. Connect the oscilloscope between IC501 pin ㉛ (TP552 (RF)) and GND on Main board.
2. Insert the disc (YEDS-18). (Part No. : 3-702-101-01)
3. Press the ►II button.
4. Confirm that the oscilloscope waveform is as shown in the figure below. (eye pattern)
   A good eye pattern means that the diamond shape (◇) in the center of the waveform can be clearly distinguished.

• RF signal reference waveform (eye pattern)

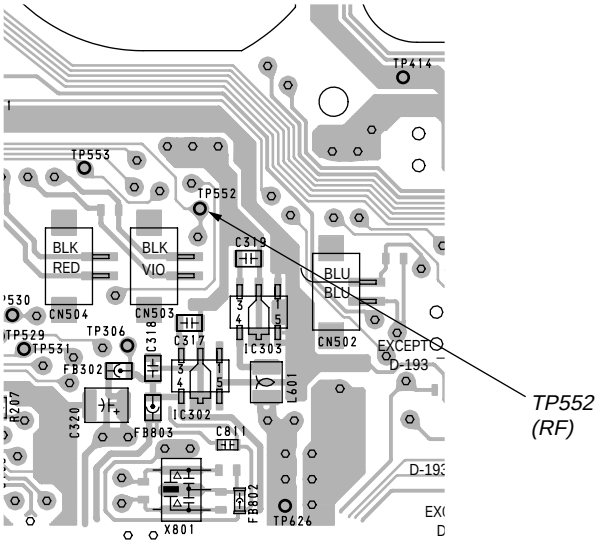
VOLT/DIV : 200 mV (10 : 1 probe in use)
TIME/DIV : 500 nS



When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

Test Point:

– MAIN BOARD (SIDE A) –



SECTION 5
DIAGRAMS

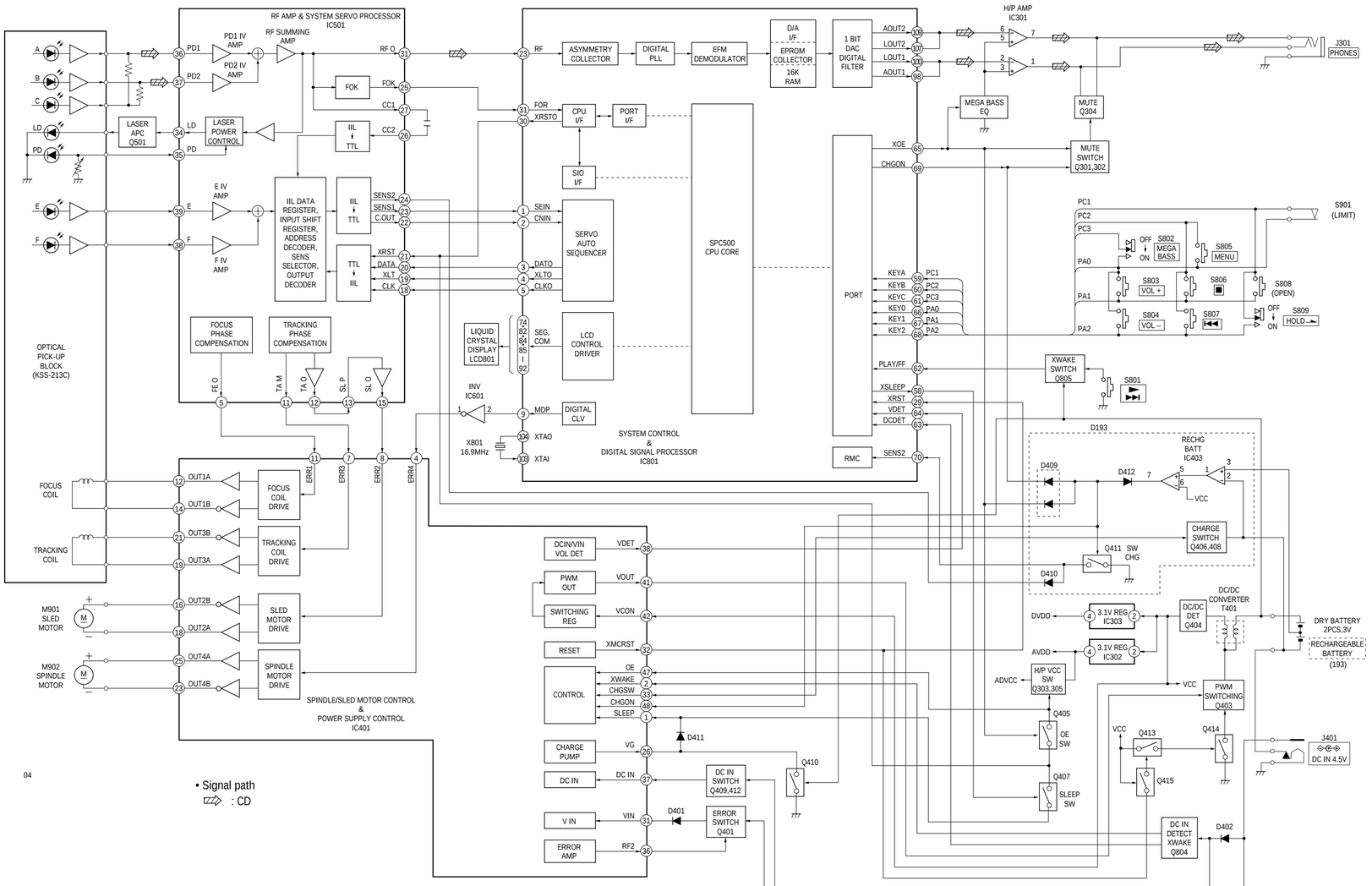
5-1. IC PIN DESCRIPTION

• IC801 CXP401-607R (SYSTEM CONTROL & DIGITAL SIGNAL PROCESSOR)

Pin No.	Pin Name	I/O	Pin Description
1	SEIN	I	SENS input from SSP.
2	CNIN	I	Track jump No. count signal input
3	DATO	O	Serial data output to SSP.
4	XLTO	O	Serial data latch output to SSP.
5	CLKO	O	Serial clock output to SSP.
6	VSS	—	Ground
7	VDD	—	Power supply pin (+3 V)
8	MON	O	Spindle motor ON/OFF control output (Not used in this set.)
9	MDP	O	Spindle motor servo control output
10	MDS	O	Spindle motor servo control output (Not used in this set.)
11	LOCK	O	Lock signal output (Not used in this set.)
12	VPCO2	O	Charge pump output for wide band EFM PLL. (Not used in this set.)
13	VPCO1	O	Charge pump output for wide band EFM PLL. (Not used in this set.)
14	VCKI	I	VCO2 oscillation input for wide band EFM PLL. (Not used in this set.)
15	V16M	O	VCO2 oscillation output for wide band EFM PLL. (Not used in this set.)
16	VCTL	I	VCO2 control voltage input for wide band EFM PLL.
17	PCO	O	Charge pump output for master PLL.
18	FILI	I	Filter input for master PLL.
19	FILO	O	Filter output for master PLL.
20	AVSS	—	Analog ground
21	CLTV	I	VCO control voltage input for master.
22	AVDD	—	Analog power supply pin (+3 V)
23	RF	I	EFM signal input
24	BIAS	I	Constant current input of asymmetry circuit.
25	ASYI	I	Asymmetry comparator voltage input
26	ASYO	O	EFM output (full-swing)
27, 28	TEST1, 0	I	LSI test pin (Connect to ground.)
29	XRST	I	System reset input (“L” active)
30	XRSTO	O	Reset signal output (“L” active)
31	FOK	I	Focus OK input
32	LRCK	O	LR clock output of D/A interface. (f = Fs)
33	LRCKI	I	LR clock input
34	PCMD	O	Serial data output of D/A interface.
35	PCMDI	I	Serial data input of D/A interface.
36	BCK	O	Bit clock output of D/A interface.
37	BCKI	I	Bit clock input of D/A interface.
38	GTOP	O	GTOP output (Not used in this set.)
39	XPCK	O	XPCK output (Not used in this set.)
40	GFS	O	GFS output (Not used in this set.)
41	RFCK	O	RFCK output (Not used in this set.)
42	C2PO	O	C2PO output (Not used in this set.)
43	VSS	—	Ground
44	VDD	—	Power supply pin (+3 V)
45	XROF	O	XROF output (Not used in this set.)
46 – 48	MNT3 – 0	O	MNT3 to 0 output (Not used in this set.)
49	C4M	O	4 frequency division output of oscillation input (at 16.9344 MHz : 4.2336 MHz) (Not used in this set.)
50	DOUT	O	Digital out output (Not used in this set.)
51	EMPHI	I	De-emphasis ON/OFF input (Not used in this set.)
52	WFCK	O	WFCK output (Not used in this set.)
53	SCOR	O	Sub code sync detection output (Not used in this set.)

Pin No.	Pin Name	I/O	Pin Description
54	SBSO	O	Serial data output of sub P to W. (Not used in this set.)
55	EXCK	I	Serial clock input for SBSO. (Connect to ground in this set.)
56	DTEST	I	LSI test pin (Connect to ground.)
57	CTEST	I	LSI test pin (Connect to ground.)
58	PC0 XSLEEP	O	Power supply IC sleep control output (“L” active)
59	PC1 KEYA	O	Key scan output A
60	PC2 KEYB	O	Key scan output B
61	PC3 KEYC	O	Key scan output C
62	PB0 PLAY/FF	I	PLAY or FF detection input (“L” active)
63	PB1 DCDET	I	DC IN (AC adaptor) detection input (“L” active)
64	PB2 VDET	I	Lo Batt or Hi dc in detection input (“L” active)
65	PB3 XOE	O	Driver control output (“L” active)
66	PA0 KEY0	I	Key scan input 0
67	PA1 KEY1	I	Key scan input 1
68	PA2 KEY2	I	Key scan input 2
69	PA3 CHGON	O	Charge start output
70	RMC SENS2	I	Remote commander reception circuit input
71	VSS	—	Ground
72	VDD	—	Power supply pin (+3 V)
73	SEG15	O	Segment signal output for LCD. (Not used in this set.)
74 – 82	SEG14 – 6	O	Segment signal output for LCD.
83	SEG5	O	Segment signal output for LCD. (Not used in this set.)
84 – 88	SEG4 – 0	O	Segment signal output for LCD.
89 – 92	COM3 – 0	O	Common signal output for LCD.
93 – 95	VLC3 – 1	—	Bias power supply pin for LCD. (Not used in this set.)
96	VSS1	—	Ground
97	AVDD1	—	Analog power supply pin (+3 V)
98	AOUT1	O	Lch • analog output
99	AIN1	I	Lch • operational amplifier input
100	LOUT1	O	Lch • LINE output
101	AVSS1	—	Analog ground
102	XVDD	—	Power supply pin for oscillation circuit. (+3 V)
103	XTAI	I	Crystal oscillation input (16.9 MHz)
104	XTAO	O	Crystal oscillation output (16.9 MHz)
105	XVSS	—	Ground for oscillation circuit.
106	AVSS2	—	Analog ground
107	LOUT2	O	Rch • LINE output
108	AIN2	I	Rch • operational amplifier input
109	AOUT2	O	Rch • analog output
110	AVDD2	—	Analog power supply pin (+3 V)
111	AVSS2	—	Analog ground
112	NC	—	Not used.

5-2. BLOCK DIAGRAM



5-3. PRINTED WIRING BOARD

• **Semiconductor Location**

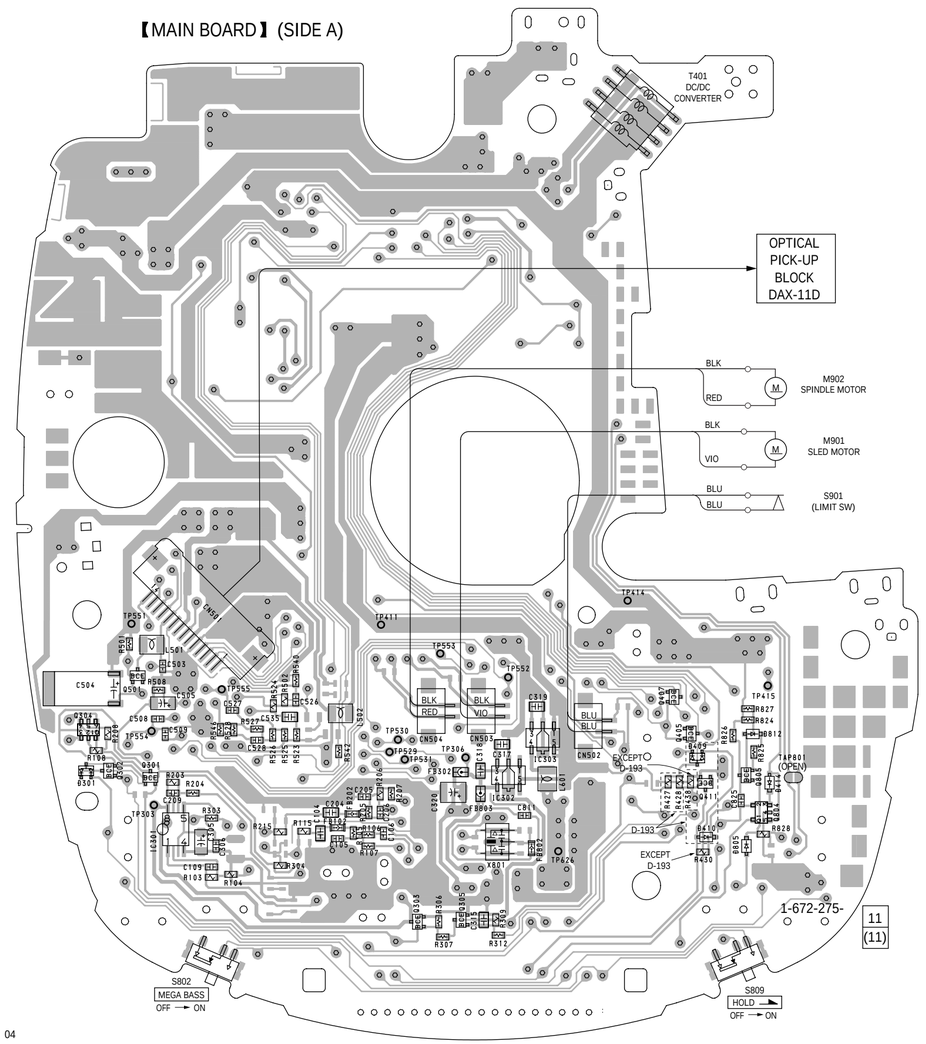
Ref. No.	Location
D301	H-1
D401	C-17
D402	B-16
D407	C-13
D408	B-15
(D409)	H-7
(D410)	I-7
D411	C-14
(D412)	D-13
D413	C-16
D414	H-7
D415	C-15
D416	E-16
D802	J-15
D803	I-11
D804	I-11
D805	I-7
D806	I-11
D807	I-11
D811	I-15
D812	H-7
IC301	I-2
IC302	H-5
IC303	H-5
IC401	C-15
(IC403)	D-13
IC501	G-16
IC601	D-15
IC801	I-13
Q301	H-2
Q302	H-2
Q303	I-4
Q304	H-1
Q305	I-5
Q306	I-16
Q307	I-16
Q401	C-16
Q403	C-13
Q404	C-13
Q405	H-7
(Q406)	G-17
Q407	G-7
(Q408)	D-16
Q409	B-16
Q410	D-14
(Q411)	H-7
Q412	B-16
Q413	E-16
Q414	E-16
Q415	E-16
Q501	G-2
Q804	H-7
Q805	H-7

( ) : D-193 only

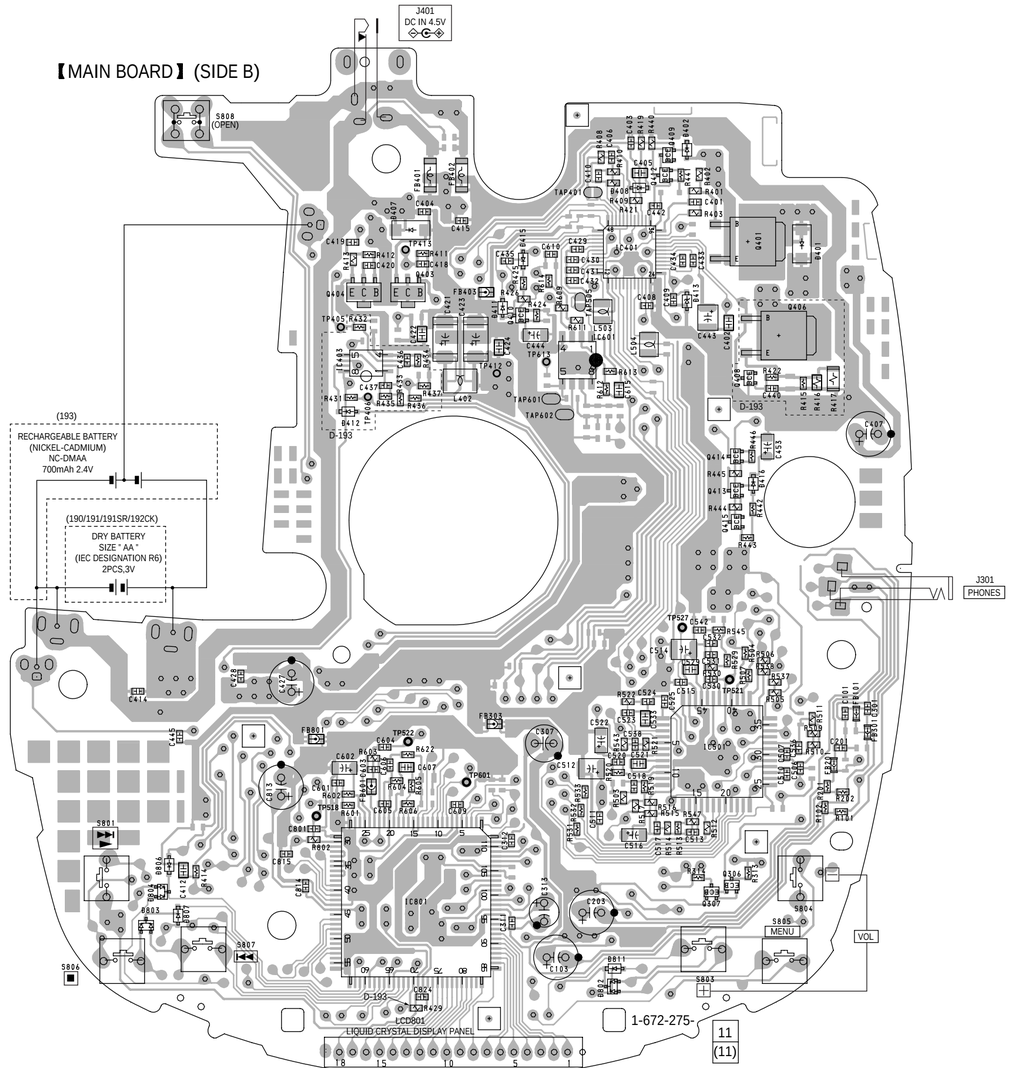
Note:
- ○——○ : parts extracted from the component side.
- ○ : Through hole.
- ▒▒▒ : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

Caution:
Pattern face side: (Side B) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A) Parts on the parts face side seen from the parts face are indicated.

【MAIN BOARD】(SIDE A)

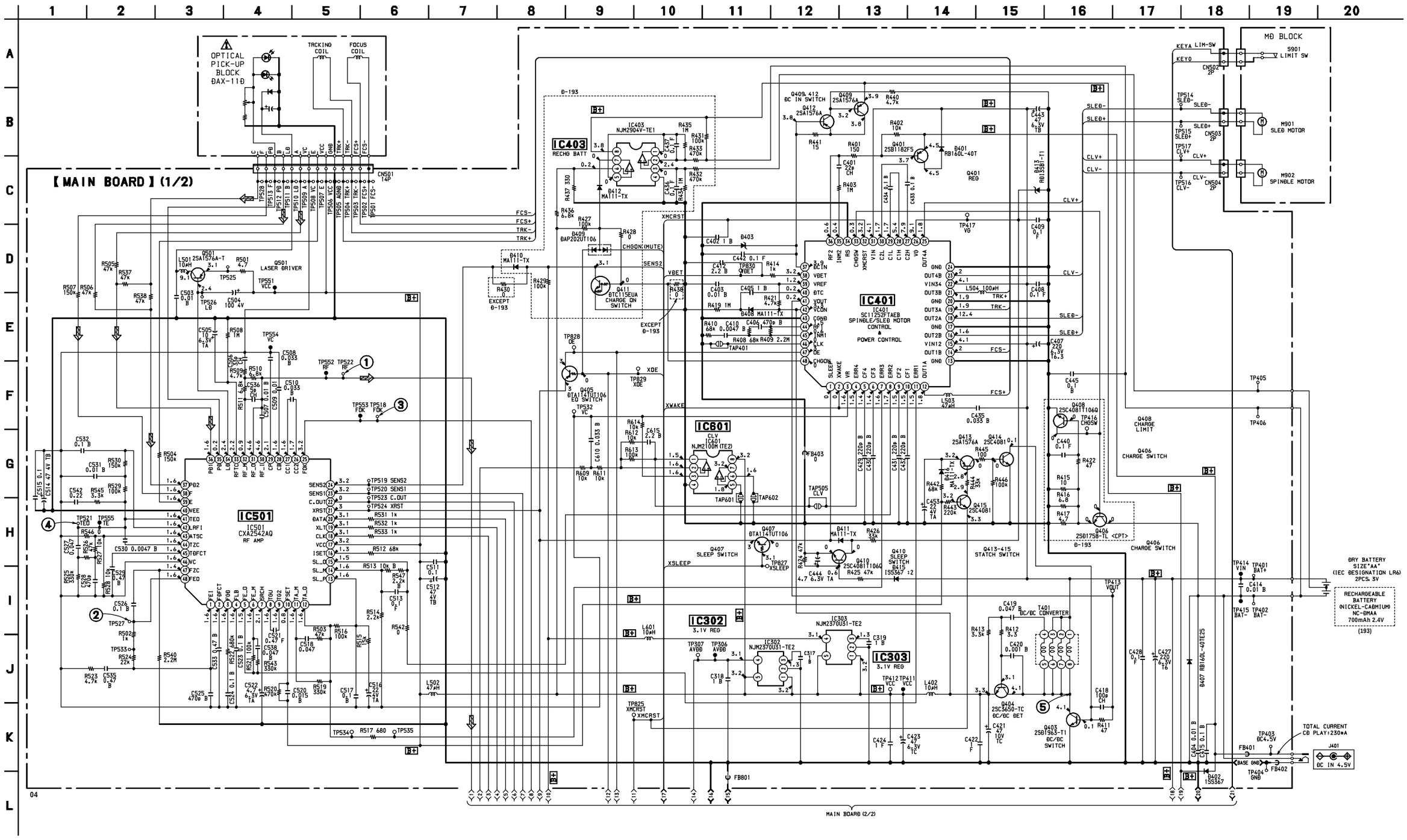


【MAIN BOARD】(SIDE B)

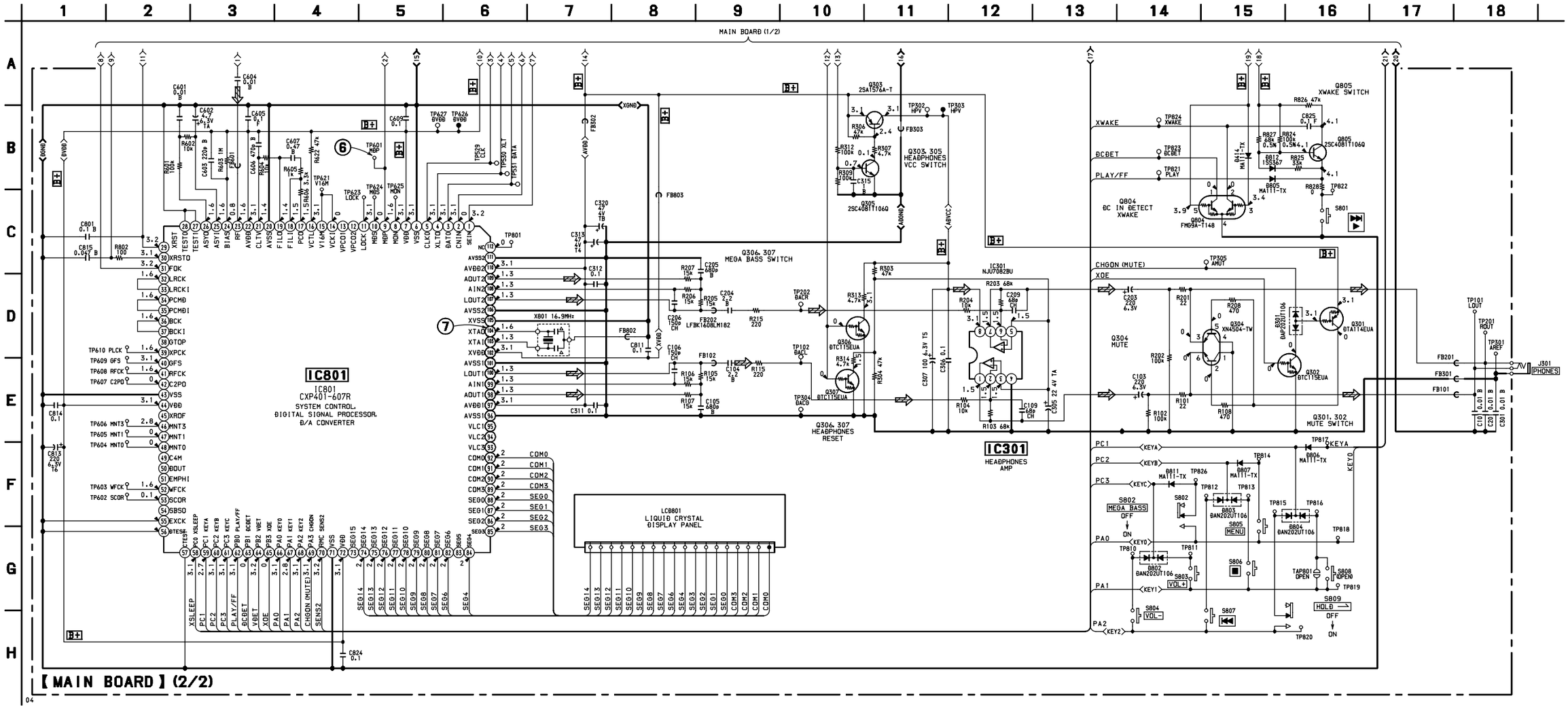


5-4. SCHEMATIC DIAGRAM — MAIN SECTION (1/2) —

• Refer to page 17 for Waveforms and note.
• Refer to page 19 for IC Block Diagrams.



5-5. SCHEMATIC DIAGRAM — MAIN SECTION (2/2) —



• **Waveforms**

① 1.3Vp-p, 0.5µsec/div, TP522 (RF)	③ 80mVp-p, 20µsec/div, TP518 (FOK)	⑤ 4.0Vp-p, 4.6µsec, 3µsec/div, Q403 Ⓒ	⑤ 1.4Vp-p, 16.9MHz, 0.05µsec/div, IC801 ⑭④
② 100mVp-p, 20µsec/div, TP527 (FEO)	④ 100mVp-p, 20µsec/div, TP521 (TEO)	⑥ 1.5Vp-p, 7.6µsec, 2µsec/div, TP601 (MDP)	

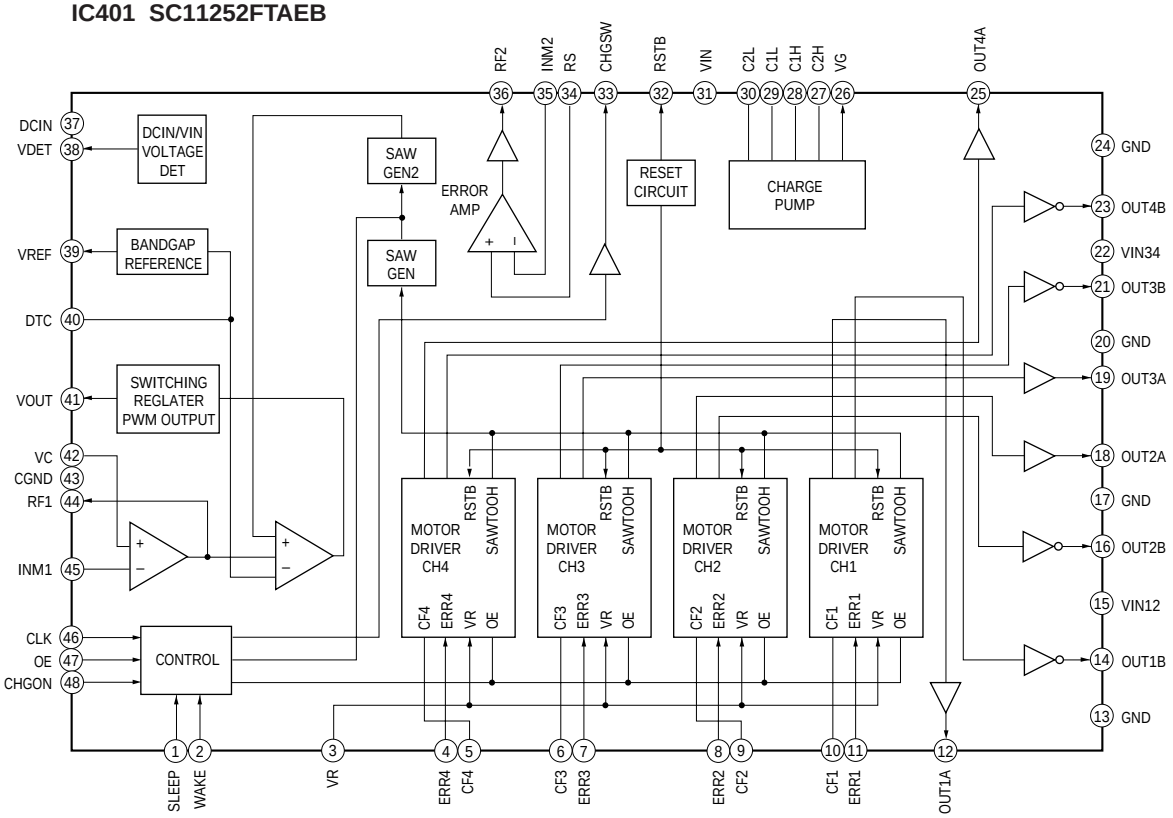
Note:
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ▭ : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

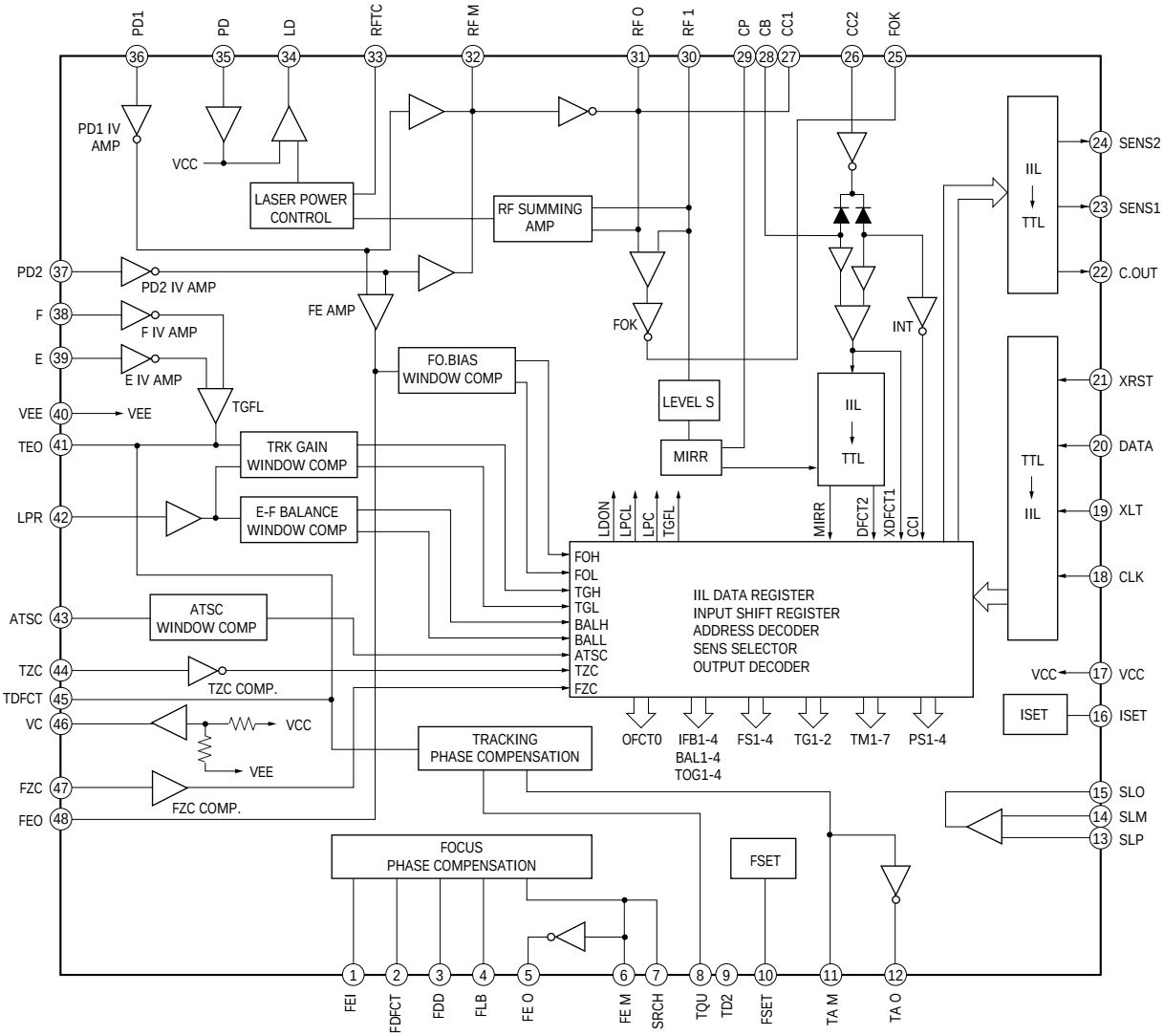
- B+ : B+ Line.
- Power voltage is dc 3 V and fed with regulated dc power supply from battery terminal.
- Voltages and waveforms are dc with respect to ground in playback mode.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path. ⇨ : CD

• **IC Block Diagrams**

IC401 SC11252FTAEB



IC501 CXA2542AQ



SECTION 6
EXPLODED VIEWS

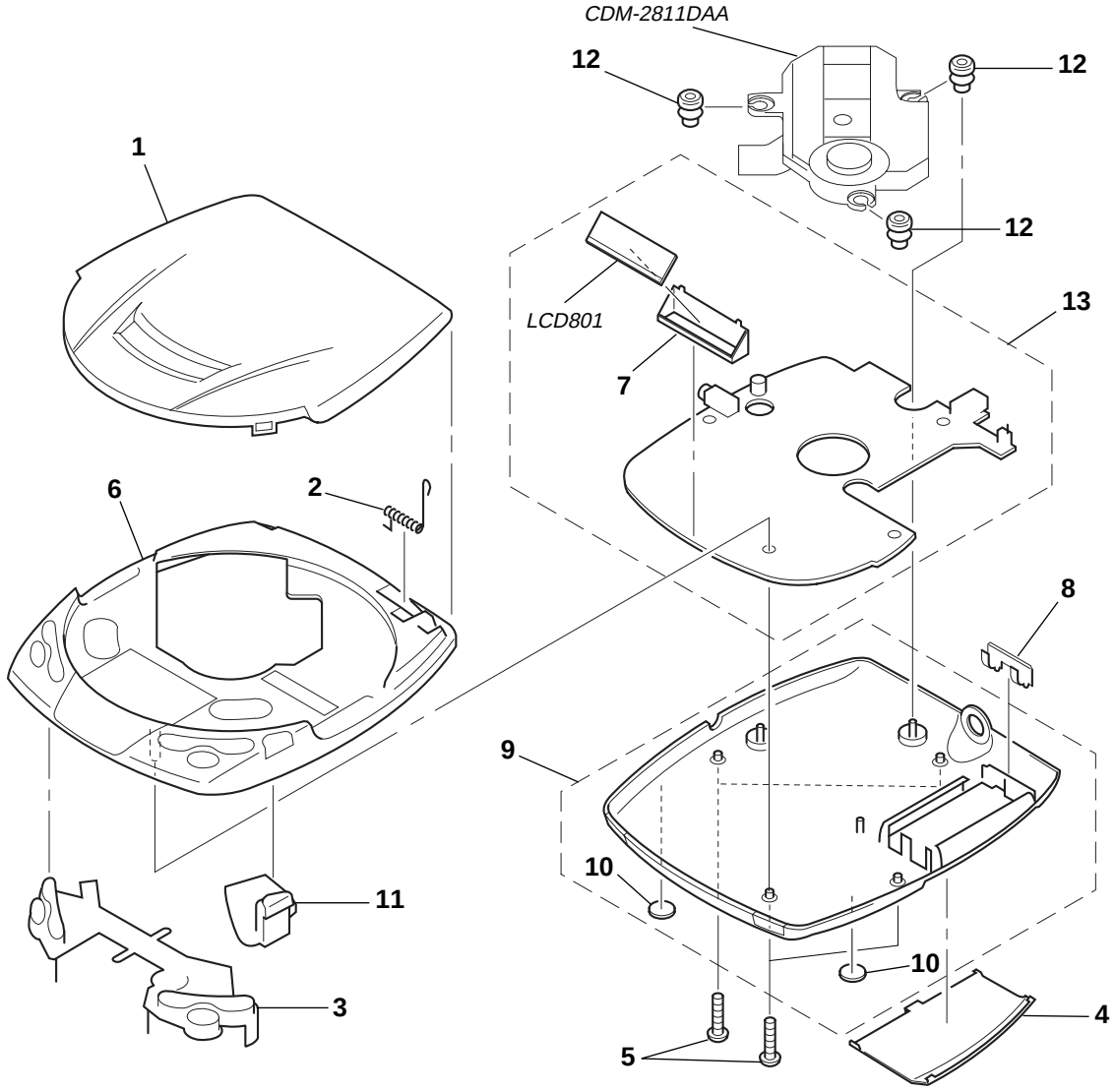
NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Abbreviation
  AR : Arabic model
  AUS : Australian model
  BR : Brazilian model
  CH : Chinese model
  CND : Canadian model
  E13 : AC 220 - 230V area in E model
  E33 : AC 100 - 240V area in E model
  E92 : AC 120V area in E model
  EA : Saudi Arabia model
  EE : East European model
  FR : French model
  G : German model
  MX : Mexican model

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Accessories and packing materials and hardware (# mark) list are given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.

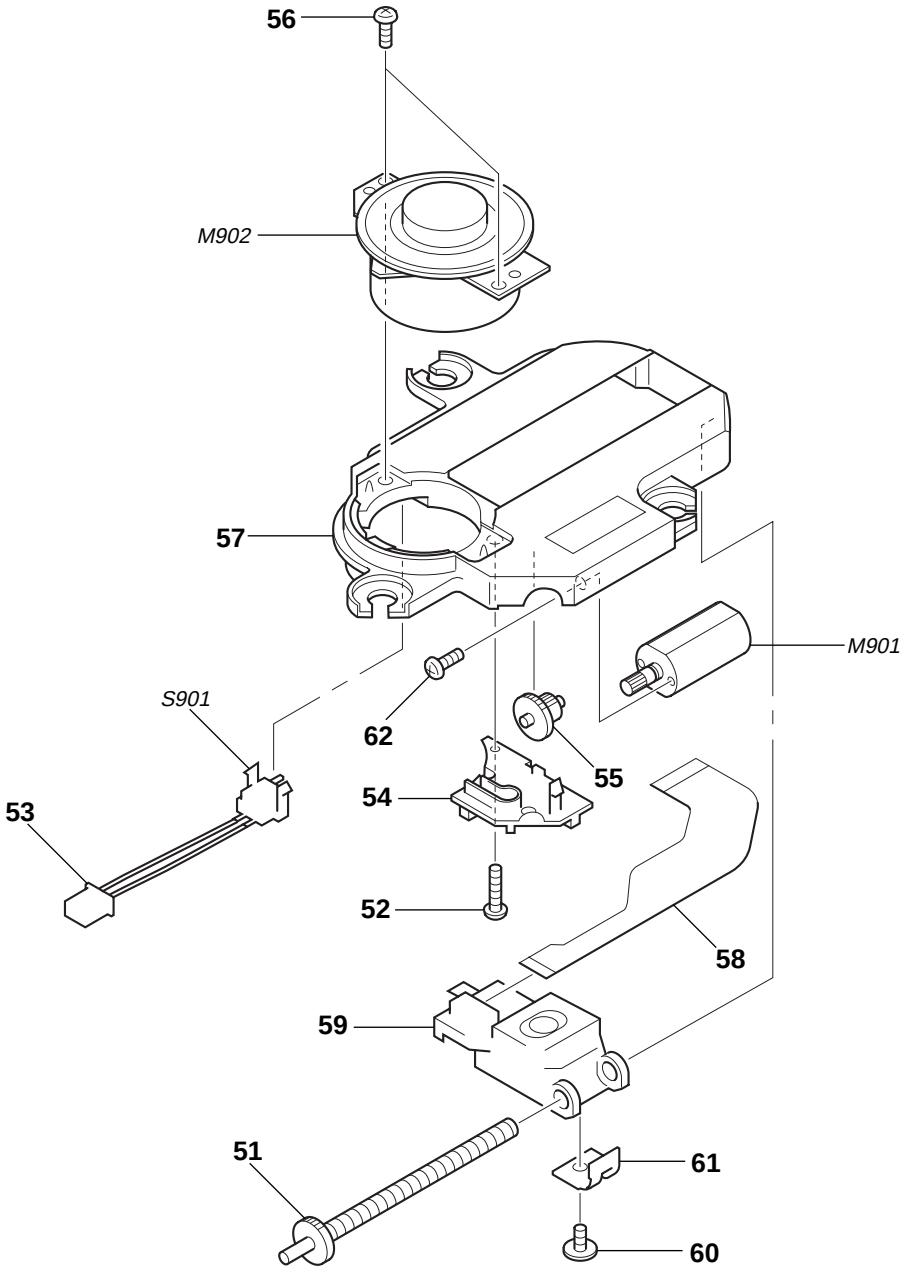
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

6-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	X-4950-609-1	LID ASSY, UPPER (191) (SILVER)	
1	X-4950-610-1	LID ASSY, UPPER (191:CND,AEP,AUS,CH,E13, EE,FR,G,UK/191SR) (BLUE)	
1	X-4950-611-1	LID ASSY, UPPER (191:AEP,AUS,E13,FR,G,UK) (GREEN)	
1	X-4950-612-1	LID ASSY, UPPER (191:US,AEP,AUS,E13,E92, FR,G,UK) (WHITE)	
1	X-4950-614-1	LID ASSY, UPPER (192CK)	
1	X-4950-615-1	LID ASSY (S), UPPER (193) (SILVER)	
1	X-4950-616-1	LID ASSY (L), UPPER (193:US) (BLUE)	
1	X-4951-457-1	LID ASSY, UPPER (190)	
2	4-216-161-01	SPRING (OPEN)	
3	4-214-667-01	BUTTON (CONTROL) (191:US,CND,E92,MX/ 192CK:US,E92/193:US,E92)	
3	4-214-667-11	BUTTON (CONTROL) (190/191:EXCEPT CND,E92,MX,US/191SR/ 192CK:EXCEPT E92,US/193:EXCEPT E92,US)	
4	4-214-666-01	LID, BATTERY CASE	
5	3-336-395-01	SCREW (B2X10) (G), TAPPING	
6	X-4951-719-1	CABINET (FRONT/I) SERVICE ASSY (GRAY)	
6	X-4951-720-1	CABINET (FRONT/S) SERVICE ASSY (SILVER)	
6	X-4951-721-1	CABINET (FRONT/L) SERVICE ASSY (BLUE)	
6	X-4951-722-1	CABINET (FRONT/G) SERVICE ASSY (GREEN)	
6	X-4951-723-1	CABINET (FRONT/W) SERVICE ASSY (WHITE)	
7	4-214-672-01	HOLDER (LCD)	
8	4-214-625-11	TERMINAL BOARD (RELAY), BATTERY	
9	X-4950-613-1	CABINET (REAR) SUB ASSY	
10	4-966-278-01	FOOT, RUBBER	
11	4-214-668-01	BUTTON (OPEN) (191:US,CND,E92,MX/ 192CK:US,E92/193:US,E92)	
11	4-214-668-11	BUTTON (OPEN) (190/191:EXCEPT CND,E92,MX,US/191SR/ 192CK:EXCEPT E92,US/193:EXCEPT E92,US)	
12	4-214-676-11	INSULATOR	
13	A-3323-100-A	MAIN BOARD, COMPLETE (191:US,CND,E92/ 192CK:US,E92)	
13	A-3323-133-A	MAIN BOARD, COMPLETE (193:EXCEPT BR)	
13	A-3323-134-A	MAIN BOARD, COMPLETE (190/191:EXCEPT US,CND,E92/ 191SR/192CK:EXCEPT US,E92)	
13	A-3323-196-A	MAIN BOARD, COMPLETE (BR)	
LCD801	1-803-508-11	DISPLAY PANEL, LIQUID CRYSTAL	

6-2. MD SECTION
(CDM-2811DAA)



The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
51	A-3303-970-A	SCREW ASSY, FEED	
52	3-318-203-12	SCREW (B1.7), TAPPING	
53	1-690-530-81	LEAD (WITH CONNECTOR)	
54	4-972-165-01	RACK	
55	4-974-003-01	GEAR (B)	
56	3-719-401-11	SCREW (B1.7), TAPPING	
* 57	4-984-320-01	CHASSIS	
58	1-660-965-11	SLIDE FLEXIBLE BOARD	
⚠59	X-4948-977-1	PICK-UP ASSY, OPTICAL (DAX-11D)	
60	4-973-631-01	SCREW	
61	4-972-163-04	SPRING, SLED	
62	7-627-850-17	SCREW, PRECISION +P 1.4X2.5	
M901	A-3303-403-A	MOTOR ASSY, SLED (SLED)	
M902	A-3304-989-A	MOTOR ASSY, TURN TABLE (SPINDLE)	
S901	1-571-099-21	SWITCH (1 KEY) (LIMIT)	

SECTION 7
ELECTRICAL PARTS LIST

MAIN

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- RESISTORS
  All resistors are in ohms.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ, for example:
  uA.. : µA.. uPA.. : µPA..
  uPB.. : µPB.. uPC.. : µPC.. uPD.. : µPD..
- CAPACITORS
  uF : µF
- COILS
  uH : µH

- Abbreviation
  AR : Arabic model
  AUS : Australian model
  BR : Brazilian model
  CH : Chinese model
  CND : Canadian model
  E13 : AC 220-230V area in E model
  E33 : AC 100-240V area in E model
  E92 : AC 120V area in E model
  EA : Saudi Arabia model
  EE : East European model
  FR : French model
  G : German model
  MX : Mexican model

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	A-3323-100-A	MAIN BOARD, COMPLETE (191:US,CND,E92/192CK:US,E92)			
	A-3323-133-A	MAIN BOARD, COMPLETE (193:EXCEPT BR)			
	A-3323-134-A	MAIN BOARD, COMPLETE (190/191:EXCEPT US,CND,E92/191SR/192CK:EXCEPT US,E92)			
	A-3323-196-A	MAIN BOARD, COMPLETE (BR)			
		**********			
	4-214-672-01	HOLDER (LCD)			
	4-214-677-01	PLATE (A), CHARGE DETECTION (193)			
	4-214-678-01	PLATE (B), CHARGE DETECTION (193)			
	4-978-695-01	PLATE, TERMINAL, BATTERY			
		< CAPACITOR >			
C101	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C103	1-124-635-00	ELECT	220uF	20%	6.3V
C104	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C105	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C106	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C109	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C201	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C203	1-124-635-00	ELECT	220uF	20%	6.3V
C204	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C205	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C206	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C209	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C301	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C305	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C306	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C307	1-126-382-11	ELECT	100uF	20%	6.3V
C311	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C312	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C313	1-126-513-11	ELECT	47uF	20%	4V
C315	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C317	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C318	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C319	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C320	1-104-908-11	TANTAL. CHIP	47uF	20%	4V
C401	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C402	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C403	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C404	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C405	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C406	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C407	1-124-635-00	ELECT	220uF	20%	6.3V

Ref. No.	Part No.	Description			Remark
C408	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C409	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C410	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C412	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C414	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C415	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C418	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C419	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C420	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C421	1-113-642-11	TANTAL. CHIP	47uF	20%	10V
C422	1-164-346-11	CERAMIC CHIP	1uF		16V
C423	1-104-753-11	TANTAL. CHIP	47uF	20%	6.3V
C424	1-164-346-11	CERAMIC CHIP	1uF		16V
C427	1-124-635-00	ELECT	220uF	20%	6.3V
C428	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C429	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C430	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C431	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C432	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C433	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C434	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C435	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C436	1-164-156-11	CERAMIC CHIP	0.1uF		25V (193)
C437	1-164-156-11	CERAMIC CHIP	0.1uF		25V (193)
C440	1-164-156-11	CERAMIC CHIP	0.1uF		25V (193)
C443	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C444	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C445	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C453	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C503	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C504	1-110-409-21	ELECT CHIP	100uF	20%	4V
C505	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C506	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C507	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C508	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C509	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C510	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C511	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C512	1-104-908-11	TANTAL. CHIP	47uF	20%	4V
C513	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C514	1-104-908-11	TANTAL. CHIP	47uF	20%	4V
C515	1-164-156-11	CERAMIC CHIP	0.1uF		25V

MAIN

Ref. No.	Part No.	Description			Remark
C516	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C517	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C518	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C520	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C521	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C522	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C523	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C524	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C525	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C526	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C527	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C528	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C529	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C530	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C531	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C532	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C533	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C535	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C536	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C538	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C601	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C602	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C603	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C604	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C605	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C606	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C607	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C609	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C610	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C615	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C801	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C811	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C813	1-124-635-00	ELECT	220uF	20%	6.3V
C814	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C815	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C824	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C825	1-164-156-11	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN501	1-566-530-11	CONNECTOR, FPC (ZIF) 14P			
* CN502	1-695-320-51	PIN, CONNECTOR (1.5MM) (SMD) 2P			
* CN503	1-695-320-31	PIN, CONNECTOR (1.5MM) (SMD) 2P			
CN504	1-695-320-21	PIN, CONNECTOR (1.5MM) (SMD) 2P			
		< DIODE >			
D301	8-719-941-09	DIODE DAP202U			
D401	8-719-048-98	DIODE RB160L-40TE25			
D402	8-719-404-50	DIODE MA111-TX			
D407	8-719-048-98	DIODE RB160L-40TE25			
D408	8-719-404-50	DIODE MA111-TX			
D409	8-719-941-09	DIODE DAP202U (193)			
D410	8-719-404-50	DIODE MA111-TX (193)			
D411	8-719-404-50	DIODE MA111-TX			

Ref. No.	Part No.	Description	Remark
D412	8-719-404-50	DIODE MA111-TX (193)	
D413	8-719-037-26	DIODE RD13SB1-T1	
D414	8-719-404-50	DIODE MA111-TX	
D415	8-719-049-09	DIODE 1SS367-T3SONY	
D416	8-719-404-50	DIODE MA111-TX	
D802	8-719-941-86	DIODE DAN202U	
D803	8-719-941-86	DIODE DAN202U	
D804	8-719-941-86	DIODE DAN202U	
D805	8-719-404-50	DIODE MA111-TX	
D806	8-719-404-50	DIODE MA111-TX	
D807	8-719-404-50	DIODE MA111-TX	
D811	8-719-404-50	DIODE MA111-TX	
D812	8-719-049-09	DIODE 1SS367-T3SONY	
		< FERRITE BEAD >	
FB101	1-500-444-11	FERRITE, EMI (SMD)	
FB102	1-500-444-11	FERRITE, EMI (SMD)	
FB201	1-500-444-11	FERRITE, EMI (SMD)	
FB202	1-500-444-11	FERRITE, EMI (SMD)	
FB301	1-500-444-11	FERRITE, EMI (SMD)	
FB302	1-500-444-11	FERRITE, EMI (SMD)	
FB303	1-469-134-21	FERRITE, EMI (SMD)	
FB401	1-500-451-11	FERRITE, EMI (SMD)	
FB402	1-500-451-11	FERRITE, EMI (SMD)	
FB403	1-216-295-00	SHORT 0	
FB601	1-414-235-22	INDUCTOR, FERRITE BEAD	
FB801	1-469-134-21	FERRITE, EMI (SMD)	
FB802	1-500-444-11	FERRITE, EMI (SMD)	
FB803	1-414-916-11	FERRITE, EMI (SMD)	
		< IC >	
IC301	8-759-573-33	IC NJU7082BV(TE2)	
IC302	8-759-486-53	IC NJM2370U31-TE2	
IC303	8-759-486-53	IC NJM2370U31-TE2	
IC401	8-759-570-22	IC SC111252FTAEB	
IC403	8-759-337-40	IC NJM2904V(TE2) (193)	
IC501	8-752-083-24	IC CXA2542AQ	
IC601	8-759-701-39	IC NJM3404AM	
IC801	8-752-904-62	IC CXP401-607R	
		< JACK >	
J301	1-774-804-11	JACK (PHONES)	
J401	1-778-153-21	JACK, DC (POLARITY UNIFIED TYPE) (DC IN 4.5V)	
		< COIL >	
L402	1-414-431-11	INDUCTOR 10uH	
L501	1-414-398-11	INDUCTOR 10uH	
L502	1-414-402-11	INDUCTOR 47uH	
L503	1-414-402-11	INDUCTOR 47uH	
L504	1-414-404-11	INDUCTOR 100uH	
L601	1-414-398-11	INDUCTOR 10uH	

Ref. No.	Part No.	Description	Remark
		< LIQUID CRYSTAL DISPLAY >	
LCD801	1-803-508-11	DISPLAY PANEL, LIQUID CRYSTAL	
		< TRANSISTOR >	
Q301	8-729-028-73	TRANSISTOR DTA114EUA-T106	
Q302	8-729-029-00	TRANSISTOR DTC115EUA-T106	
Q303	8-729-026-53	TRANSISTOR 2SA1576A-T106-QR	
Q304	8-729-425-18	TRANSISTOR XN4504	
Q305	8-729-905-34	TRANSISTOR 2SC4081-Q	
Q306	8-729-029-00	TRANSISTOR DTC115EUA-T106	
Q307	8-729-029-00	TRANSISTOR DTC115EUA-T106	
Q401	8-729-921-93	TRANSISTOR 2SB1182F5-QR	
Q403	8-729-923-36	TRANSISTOR 2SD1963-Q.R	
Q404	8-729-022-67	TRANSISTOR 2SC3650-TD	
Q405	8-729-905-96	TRANSISTOR DTA114TU	
Q406	8-729-922-34	TRANSISTOR 2SD1758F5-QR (193)	
Q407	8-729-905-96	TRANSISTOR DTA114TU	
Q408	8-729-905-34	TRANSISTOR 2SC4081-Q (193)	
Q409	8-729-026-53	TRANSISTOR 2SA1576A-T106-QR	
Q410	8-729-905-34	TRANSISTOR 2SC4081-Q	
Q411	8-729-029-00	TRANSISTOR DTC115EUA-T106 (193)	
Q412	8-729-026-53	TRANSISTOR 2SA1576A-T106-QR	
Q413	8-729-026-53	TRANSISTOR 2SA1576A-T106-QR	
Q414	8-729-905-34	TRANSISTOR 2SC4081-Q	
Q415	8-729-905-34	TRANSISTOR 2SC4081-Q	
Q501	8-729-026-53	TRANSISTOR 2SA1576A-T106-QR	
Q804	8-729-035-63	TRANSISTOR FMG9A-T148	
Q805	8-729-905-34	TRANSISTOR 2SC4081-Q	
		< RESISTOR >	
R101	1-216-801-11	METAL CHIP 22 5% 1/16W	
R102	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R103	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R104	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R105	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R106	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R107	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R108	1-216-817-11	METAL CHIP 470 5% 1/16W	
R115	1-216-813-11	METAL CHIP 220 5% 1/16W	
R201	1-216-801-11	METAL CHIP 22 5% 1/16W	
R202	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R203	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R204	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R205	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R206	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R207	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R208	1-216-817-11	METAL CHIP 470 5% 1/16W	
R215	1-216-813-11	METAL CHIP 220 5% 1/16W	
R303	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R304	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R306	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R307	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R309	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R312	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R313	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R314	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R401	1-216-811-11	METAL CHIP 150 5% 1/16W	
R402	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R403	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R408	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R409	1-216-861-11	METAL CHIP 2.2M 5% 1/16W	
R410	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R411	1-216-805-11	METAL CHIP 47 5% 1/16W	
R412	1-216-791-11	METAL CHIP 3.3 5% 1/16W	
R413	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R414	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R415	1-216-797-11	METAL CHIP 10 5% 1/16W	(193)
R416	1-216-311-00	METAL CHIP 6.8 5% 1/10W	(193)
R417	1-216-142-00	RES,CHIP 4.7 5% 1/8W	(193)
R419	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R421	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R422	1-216-805-11	METAL CHIP 47 5% 1/16W	(193)
R424	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R425	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R426	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R427	1-216-845-11	METAL CHIP 100K 5% 1/16W	(193)
R428	1-216-864-11	METAL CHIP 0 5% 1/16W	(193)
R429	1-216-845-11	METAL CHIP 100K 5% 1/16W	(193)
R430	1-216-864-11	METAL CHIP 0 5% 1/16W	(EXCEPT 193)
R431	1-216-845-11	METAL CHIP 100K 5% 1/16W	(193)
R432	1-216-853-11	METAL CHIP 470K 5% 1/16W	(193)
R433	1-216-853-11	METAL CHIP 470K 5% 1/16W	(193)
R434	1-216-857-11	METAL CHIP 1M 5% 1/16W	(193)
R435	1-216-857-11	METAL CHIP 1M 5% 1/16W	(193)
R436	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	(193)
R437	1-216-815-11	METAL CHIP 330 5% 1/16W	(193)
R438	1-216-864-11	METAL CHIP 0 5% 1/16W	(EXCEPT 193)
R440	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R441	1-216-799-11	METAL CHIP 15 5% 1/16W	
R442	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R443	1-216-849-11	METAL CHIP 220K 5% 1/16W	
R444	1-216-839-11	METAL CHIP 33K 5% 1/16W	

MAIN

Ref. No.	Part No.	Description			Remark
R445	1-216-809-11	METAL CHIP	100	5%	1/16W
R446	1-216-845-11	METAL CHIP	100K	5%	1/16W
R501	1-216-793-11	RES,CHIP	4.7	5%	1/16W
R502	1-216-821-11	METAL CHIP	1K	5%	1/16W
R503	1-216-841-11	METAL CHIP	47K	5%	1/16W
R504	1-216-847-11	METAL CHIP	150K	5%	1/16W
R505	1-216-841-11	METAL CHIP	47K	5%	1/16W
R506	1-216-841-11	METAL CHIP	47K	5%	1/16W
R507	1-216-847-11	METAL CHIP	150K	5%	1/16W
R508	1-216-857-11	METAL CHIP	1M	5%	1/16W
R509	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R510	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R511	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R512	1-216-843-11	METAL CHIP	68K	5%	1/16W
R513	1-216-833-11	METAL CHIP	10K	5%	1/16W
R514	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R515	1-216-835-11	METAL CHIP	15K	5%	1/16W
R516	1-216-845-11	METAL CHIP	100K	5%	1/16W
R517	1-216-819-11	METAL CHIP	680	5%	1/16W
R519	1-216-851-11	METAL CHIP	330K	5%	1/16W
R520	1-216-853-11	METAL CHIP	470K	5%	1/16W
R521	1-216-845-11	METAL CHIP	100K	5%	1/16W
R522	1-216-855-11	METAL CHIP	680K	5%	1/16W
R523	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R524	1-216-837-11	METAL CHIP	22K	5%	1/16W
R525	1-216-851-11	METAL CHIP	330K	5%	1/16W
R526	1-216-841-11	METAL CHIP	47K	5%	1/16W
R527	1-216-833-11	METAL CHIP	10K	5%	1/16W
R528	1-216-833-11	METAL CHIP	10K	5%	1/16W
R529	1-216-845-11	METAL CHIP	100K	5%	1/16W
R530	1-216-847-11	METAL CHIP	150K	5%	1/16W
R531	1-216-821-11	METAL CHIP	1K	5%	1/16W
R532	1-216-821-11	METAL CHIP	1K	5%	1/16W
R533	1-216-821-11	METAL CHIP	1K	5%	1/16W
R537	1-216-841-11	METAL CHIP	47K	5%	1/16W
R538	1-216-841-11	METAL CHIP	47K	5%	1/16W
R540	1-216-861-11	METAL CHIP	2.2M	5%	1/16W
R542	1-216-864-11	METAL CHIP	0	5%	1/16W
R543	1-216-851-11	METAL CHIP	330K	5%	1/16W
R545	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R546	1-216-864-11	METAL CHIP	0	5%	1/16W
R547	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R601	1-216-845-11	METAL CHIP	100K	5%	1/16W
R602	1-216-833-11	METAL CHIP	10K	5%	1/16W
R603	1-216-857-11	METAL CHIP	1M	5%	1/16W
R604	1-216-833-11	METAL CHIP	10K	5%	1/16W
R605	1-216-821-11	METAL CHIP	1K	5%	1/16W
R606	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R609	1-216-833-11	METAL CHIP	10K	5%	1/16W
R611	1-216-833-11	METAL CHIP	10K	5%	1/16W
R612	1-216-833-11	METAL CHIP	10K	5%	1/16W
R613	1-216-845-11	METAL CHIP	100K	5%	1/16W
R614	1-216-833-11	METAL CHIP	10K	5%	1/16W
R622	1-216-841-11	METAL CHIP	47K	5%	1/16W
R802	1-216-809-11	METAL CHIP	100	5%	1/16W
R824	1-218-740-11	METAL CHIP	100K	0.50%	1/16W
R825	1-218-883-11	RES,CHIP	33K	0.50%	1/16W
R826	1-216-841-11	METAL CHIP	47K	5%	1/16W
R827	1-218-736-11	METAL CHIP	68K	0.50%	1/16W
R828	1-216-864-11	METAL CHIP	0	5%	1/16W
		< SWITCH >			
S801	1-692-014-11	SWITCH, KEY BOARD (▶▶I ►)			
S802	1-572-922-11	SWITCH, SLIDE (MEGA BASS)			
S803	1-692-014-11	SWITCH, KEY BOARD (VOL +)			
S804	1-692-014-11	SWITCH, KEY BOARD (VOL –)			
S805	1-692-014-11	SWITCH, KEY BOARD (MENU)			
S806	1-692-014-11	SWITCH, KEY BOARD (■)			
S807	1-692-014-11	SWITCH, KEY BOARD (I◀◀)			
S808	1-762-822-11	SWITCH, PUSH (1 KEY) (OPEN)			
S809	1-572-922-11	SWITCH, SLIDE (HOLD)			
		< TRANSFORMER >			
T401	1-433-560-11	TRANSFORMER, DC-DC CONVERTER			
		< VIBRATOR >			
X801	1-767-366-21	VIBRATOR, CERAMIC (16.9MHz)			
**********					
		MISCELLANEOUS			
		**********			
53	1-690-530-81	LEAD (WITH CONNECTOR)			
58	1-660-965-11	SLIDE FLEXIBLE BOARD			
⚠59	X-4948-977-1	PICK-UP ASSY, OPTICAL (DAX-11D)			
M901	A-3303-403-A	MOTOR ASSY, SLED (SLED)			
M902	A-3304-989-A	MOTOR ASSY, TURN TABLE (SPINDLE)			
S901	1-571-099-21	SWITCH (1 KEY) (LIMIT)			
**********					

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-251-696-11	CONNECTING PACK, CAR (192CK)	
⚠	1-467-007-21	ADAPTOR, AC (AC-E455) (AUS)	
⚠	1-467-012-11	ADAPTOR, AC (AC-E455) (EA)	
⚠	1-467-195-11	ADAPTOR, AC (AC-E455A)	(BR,CND,E92,MX,US)
⚠	1-467-550-11	ADAPTOR, AC (AC-E455A) (E33)	
⚠	1-473-115-11	ADAPTOR, AC (AC-E455D)	(191:UK/191SR:UK/192CK:UK)
⚠	1-473-116-35	ADAPTOR, AC (AC-E455D)	(191:AEP,E13,EE,FR,G/191SR:AEP,AR,FR,G/192CK:AEP,E13,EE,FR,G/193:AEP,E13,EE,FR,G,UK)
⚠	1-475-622-11	ADAPTOR, AC (AC-E455) (CH/191SR:EE)	
⚠	1-475-969-11	ADAPTOR, AC (AC-E455) (191:AR/192CK:AR)	
	1-528-939-11	BATTERY PACK (NI-CD)	(193:AUS,CH,E13,E33,E92,EA,EE)
	1-528-939-21	BATTERY PACK (NI-CD)	(193:AEP,BR,FR,G,UK,US)
⚠	1-532-433-11	FUSE, GLASS TUBE (1A) (192CK)	
	1-559-906-32	CORD, CONNECTION (190/191:EXCEPT US/192CK:EXCEPT US/193:EXCEPT US)	
⚠	1-569-007-11	ADAPTOR, CONVERSION 2P (E33)	
⚠	1-569-008-21	ADAPTOR, CONVERSION 2P (E13,EA)	
⚠	1-573-856-11	ADAPTOR, CHANGE (BR)	
	1-751-419-11	CORD, CONNECTION (190/191:EXCEPT US/192CK:EXCEPT US/193:EXCEPT US)	
	1-769-723-11	CORD, CONNECTION (190/191:EXCEPT US/192CK:EXCEPT US/193:EXCEPT US)	
	1-784-619-11	CORD, CAR BATTERY DCC-E2455//M SET	(192CK:EXCEPT E92,US)
	2-201-810-00	TAPE, MAGIC (192CK:EXCEPT E92)	
	3-810-764-21	MANUAL, INSTRUCTION (ENGLISH)	(192CK:EXCEPT E92,G,US)
	3-865-739-11	MANUAL, INSTRUCTION (SPANISH)	(190:AEP,EE/191:AEP,AR,E33,MX/191SR:AEP,EE/192CK:AEP,AR,E33)
	3-865-739-21	MANUAL, INSTRUCTION (ENGLISH)	(190:EXCEPT G/191:EXCEPT CH,CND,E13,E92,G,US/191SR:EXCEPT G/192CK:EXCEPT E92,G,US)
	3-865-739-31	MANUAL, INSTRUCTION (FRENCH)	(190:AEP,FR/191:AEP,FR/191SR:AEP,AR,FR/192CK:AEP,FR)
	3-865-739-41	MANUAL, INSTRUCTION (DUTCH) (190:AEP/191:AEP,EE/191SR:AEP/192CK:AEP,E13,EE)	
	3-865-739-51	MANUAL, INSTRUCTION (SWEDISH) (190:AEP/191:AEP/191SR:AEP/192CK:AEP)	
	3-865-739-61	MANUAL, INSTRUCTION (PORTUGUESE)	(190:AEP/191:AEP,AR,MX/191SR:AEP/192CK:AEP,AR)
	3-865-739-71	MANUAL, INSTRUCTION (GERMAN) (190:AEP,G/191:AEP,G/191SR:AEP,G/192CK:AEP,G)	
	3-865-739-81	MANUAL, INSTRUCTION (ITALIAN) (190:AEP/191:AEP/191SR:AEP/192CK:AEP)	
	3-865-739-91	MANUAL, INSTRUCTION (FINNISH) (190:AEP/191:AEP/191SR:AEP/192CK:AEP)	
	3-865-741-11	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (191:E13)	
	3-865-741-21	MANUAL, INSTRUCTION (ENGLISH)	(191:CH,E13)
	3-865-741-31	MANUAL, INSTRUCTION (SIMPLIFIED CHINESE)	(191:CH)
	3-865-742-11	MANUAL, INSTRUCTION (RUSSIAN) (190:EE/191:EE/191SR:EE/192CK:E13,EE)	
	3-865-742-21	MANUAL, INSTRUCTION (CZECH) (190:EE/191:EE/191SR:EE/192CK:E13,EE)	
	3-865-742-31	MANUAL, INSTRUCTION (HUNGARIAN) (190:EE/191:EE/191SR:EE/192CK:E13,EE)	
	3-865-742-41	MANUAL, INSTRUCTION (POLISH) (190:EE/191:EE/191SR:EE/192CK:E13,EE)	
	3-865-743-11	MANUAL, INSTRUCTION (SPANISH)	(193:AEP,E33,E92)
	3-865-743-21	MANUAL, INSTRUCTION (ENGLISH)	(193:EXCEPT BR,CH,E13,G)
	3-865-743-31	MANUAL, INSTRUCTION (FRENCH) (193:AEP,FR)	
	3-865-743-41	MANUAL, INSTRUCTION (DUTCH) (193:AEP,EE)	
	3-865-743-51	MANUAL, INSTRUCTION (SWEDISH) (193:AEP)	
	3-865-743-61	MANUAL, INSTRUCTION (PORTUGUESE)	(193:AEP,E92)
	3-865-743-71	MANUAL, INSTRUCTION (GERMAN) (193:AEP,G)	
	3-865-743-81	MANUAL, INSTRUCTION (ITALIAN) (193:AEP)	
	3-865-743-91	MANUAL, INSTRUCTION (FINNISH) (193:AEP)	
	3-865-744-11	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (193:BR,E13)	
	3-865-744-21	MANUAL, INSTRUCTION (ENGLISH)	(193:BR,CH,E13)
	3-865-744-31	MANUAL, INSTRUCTION (SIMPLIFIED CHINESE)	(193:CH)
	3-865-745-11	MANUAL, INSTRUCTION (RUSSIAN) (193:EE)	
	3-865-745-21	MANUAL, INSTRUCTION (CZECH) (193:EE)	
	3-865-745-31	MANUAL, INSTRUCTION (HUNGARIAN) (193:EE)	
	3-865-745-41	MANUAL, INSTRUCTION (POLISH) (193:EE)	
	3-865-748-11	MANUAL, INSTRUCTION (SPANISH)	(191:E92/192CK:E92)
	3-865-748-21	MANUAL, INSTRUCTION (ENGLISH)	(191:CND,E92,US/192CK:E92,US)
	3-865-748-31	MANUAL, INSTRUCTION (FRENCH) (191:CND)	
	3-865-748-41	MANUAL, INSTRUCTION (PORTUGUESE)	(191:E92/192CK:E92)
	3-866-132-11	MANUAL, INSTRUCTION (SPANISH) (192CK:E92)	
	3-866-132-21	MANUAL, INSTRUCTION (ENGLISH)	(192CK:E92,US)
	3-866-132-41	MANUAL, INSTRUCTION (PORTUGUESE)	(192CK:E92)
	8-916-813-95	CORD, CAR BATTERY DCC-E2455 SET (192CK)	
	8-951-814-90	PLATE, MOUNT CPM-401P SET (192CK)	
	8-953-130-90	HEADPHONE MDR-E805LP/K SET	(191:EXCEPT CND,US/192CK:EXCEPT US/193:EXCEPT US)
	8-953-342-98	HEADPHONE, STEREO MDR-24//C4	(191:CND,US/192CK:US/193:US)

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

9-926-937-11

Sony Corporation
Personal A&V Products Company

99B0490-1
Printed in Japan ©1999. 2
Published by Quality Engineering Dept.
(Shinagawa)

D-190/191/191SR/192CK/193

SONY

SERVICE MANUAL

US Model
D-191/192CK/193
Canadian Model
D-191
AEP Model
UK Model
D-190/191/191SR/192CK/193
E Model
Australian Model
D-191/192CK/193
Chinese Model
D-191/193

SUPPLEMENT-2

File this supplement with the service manual.

Subject : 1. Change of Main Boards
2. Change of Exploded Views (Cabinet Section)

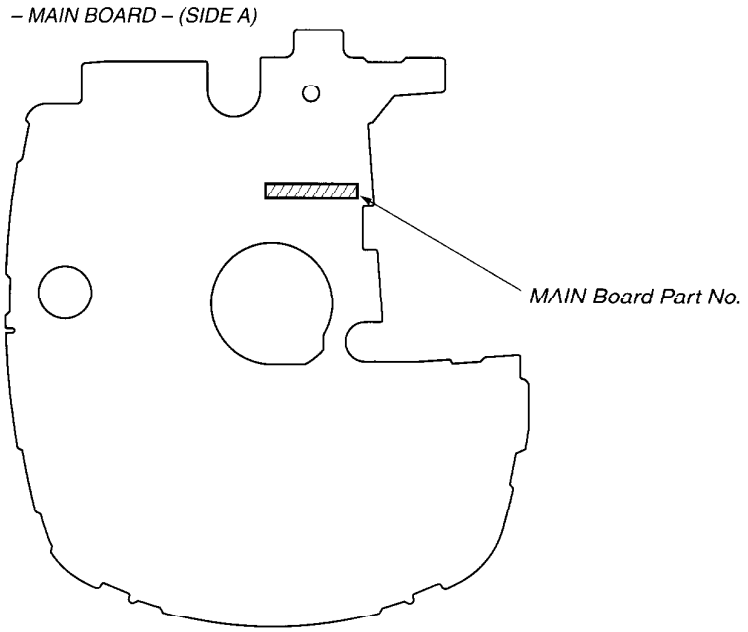
(ECN-CDA00084)

1. Change of Main Boards

Printed wiring board and schematic diagram of new type, and changed parts list are described in this Supplement-2.
Refer to original service manual (9-926-937-11) and supplement-1 (9-926-937-81) previously issued for the other information.

The new types of print diagrams include the following six types:
TYPE-I : MAIN board (1-672-275-11) + Z1R2 (A) board, Z1R2 (B) board, DEN board
TYPE-II : MAIN board (1-672-275-11) + Z1R3 board, DEN board
TYPE-III : MAIN board (1-672-275-12) + Z1R2 (A) board
TYPE-IV : MAIN board (1-672-275-12) + Z1R3 board
TYPE-V : MAIN board (1-672-275-13)
TYPE-VI : MAIN board (1-672-275-14)

When performing service and inspection, check the suffix of the part number of the main boards.



2. Change of Exploded Views

This service manual supplement-2 fully describes the cabinet section shown in the exploded views.
For information on the MD section, refer to the published service manual (9-926-937-11) and service manual supplement-1 (9-926-937-81).

NOTE:

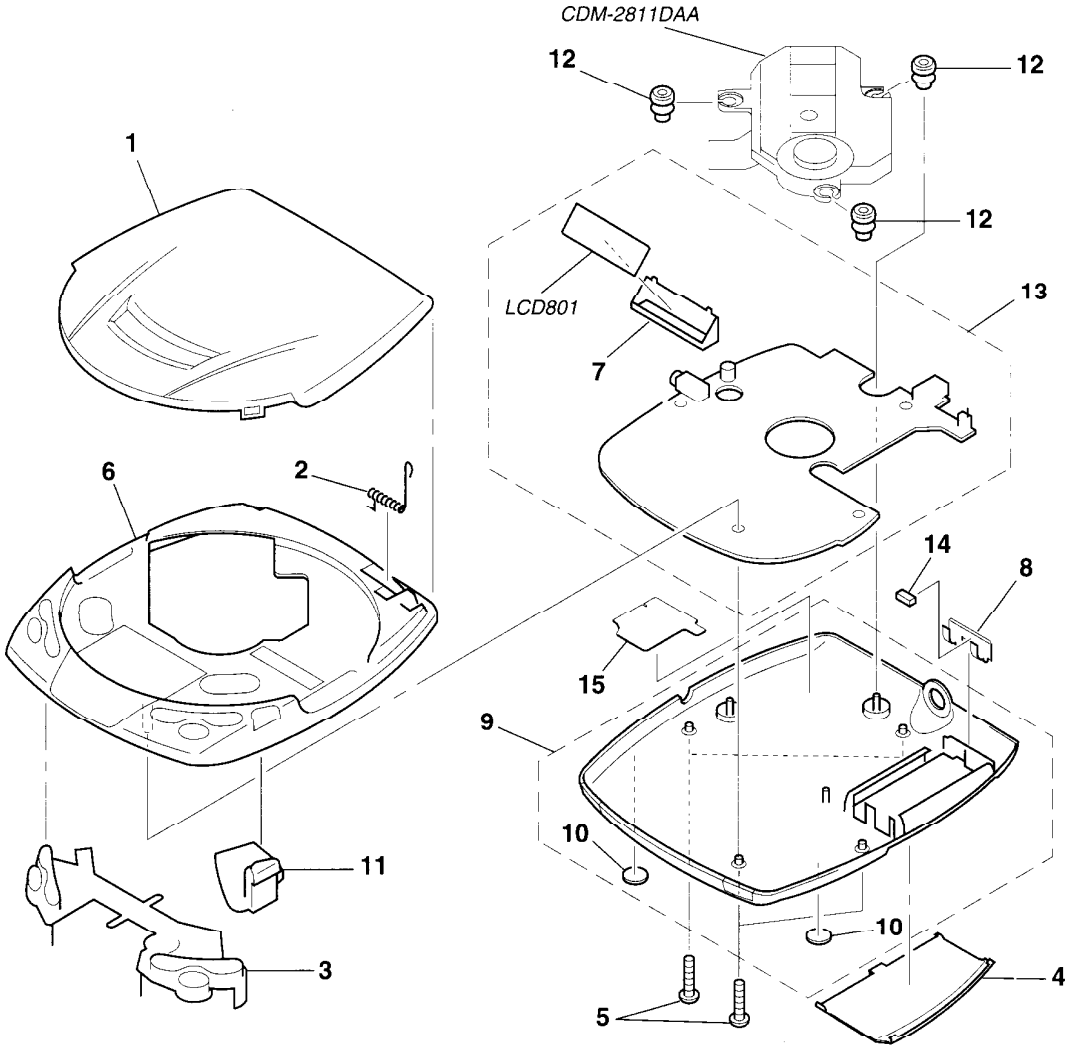
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Accessories and packing materials are given in the last of this parts list.

- Abbreviation
  AR : Argentina model
  AUS : Australian model
  BR : Brazilian model
  CH : Chinese model
  CND : Canadian model
  E13 : AC 220 - 230V area in E model
  E33 : AC 100 - 240V area in E model
  E92 : AC 120V area in E model
  EA : Saudi Arabia model
  EE : East European model
  FR : French model
  G : German model
  MX : Mexican model

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

2-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	X-4950-609-1	LID ASSY, UPPER (SILVER)	(191:EXCEPT US,CND,E92/191SR:AEP,AR,MX)
1	X-4950-610-1	LID ASSY, UPPER (BLUE)	(191:AEP,UK,FR,G,E13,EE,AUS,CH/191SR:EXCEPT AEP,AR,MX)
1	X-4950-611-1	LID ASSY, UPPER (GREEN)	(191:AEP,UK,FR,G,E13,AUS,CH)
1	X-4950-612-1	LID ASSY, UPPER (WHITE)	(191:AEP,UK,FR,G,E13,AUS)
1	X-4950-614-1	LID ASSY, UPPER (SILVER)	(192CK:EXCEPT US,E92)
1	X-4950-615-1	LID ASSY, UPPER (SILVER) (193)	
1	X-4950-616-1	LID ASSY, UPPER (BLUE) (193:US)	
1	X-4951-457-1	LID ASSY, UPPER (SILVER) (190)	
1	X-4951-823-1	LID ASSY, UPPER (SILVER) (191:US,CND,E92)	
1	X-4951-921-1	LID ASSY, UPPER (BLUE) (191:CND)	
1	X-4951-922-1	LID ASSY, UPPER (WHITE) (191:US,E92)	
1	X-4951-931-1	LID ASSY, UPPER (SILVER) (192CK:US,E92)	
2	4-215-485-01	SPRING, TORSION	(191:US,CND,E92/192CK:US,E92)
2	4-216-161-01	SPRING (OPEN)	(190/191:EXCEPT US,CND,E92/191SR/192CK:EXCEPT US,E92/193)
3	4-214-667-01	BUTTON (CONTROL)	(▶▶I ▶,I◀◀,■,VOL +,VOL −,MENU) (191:MX/191SR:MX/193:US,E92)
3	4-214-667-11	BUTTON (CONTROL)	(▶▶I ▶,I◀◀,■,VOL +,VOL −,MENU) (190/191:EXCEPT US,CND,E92,MX/191SR:EXCEPT MX/192CK:EXCEPT US,E92/193:EXCEPT US,E92)
3	4-214-868-01	BUTTON (CONTROL)	(▶▶I ▶,I◀◀,■,VOL +,VOL −,MENU) (191:US,CND,E92/192CK:US,E92)
4	4-214-666-01	LID, BATTERY CASE	(190/191:EXCEPT US,CND,E92/191SR/192CK:EXCEPT US,E92/193)
4	4-214-867-01	LID, BATTERY CASE	(191:US,CND,E92/192CK:US,E92)
5	3-336-395-01	SCREW (B2X10) (G), TAPPING	
6	X-4951-932-1	SERVICE ASSY, CABINET (UPPER) (GRAY)	
6	X-4951-720-1	CABINET (FRONT/S) SERVICE ASSY (SILVER)	
6	X-4951-721-1	CABINET (FRONT/L) SERVICE ASSY (BLUE)	
6	X-4951-722-1	CABINET (FRONT/G) SERVICE ASSY (GREEN)	
6	X-4951-723-1	CABINET (FRONT/W) SERVICE ASSY (WHITE)	
7	4-214-672-01	HOLDER (LCD)	
8	4-214-625-11	TERMINAL BOARD (RELAY), BATTERY	(190/191:EXCEPT US,CND,E92/191SR/192CK:EXCEPT US,E92/193)
8	4-214-642-01	TERMINAL BOARD (RELAY), BATTERY	(191:US,CND,E92/192CK:US,E92)
9	A-3328-063-A	CABINET (REAR) SUB ASSY (193:BR)	
9	X-4950-613-1	CABINET (REAR) SUB ASSY	(190/191:EXCEPT US,CND,E92/191SR/192CK:EXCEPT US,E92/193:EXCEPT BR)
9	X-4951-824-1	CABINET (REAR) SUB ASSY (191:US,CND,E92/192CK:US,E92)	
10	4-966-278-01	FOOT, RUBBER	
11	4-214-668-01	BUTTON (OPEN)	(191:MX/191SR:MX/193:US,E92)
11	4-214-668-11	BUTTON (OPEN)	(190/191:EXCEPT US,CND,E92,MX/191SR:EXCEPT MX/192CK:EXCEPT US,E92/193:EXCEPT US,E92)
11	4-214-869-01	BUTTON (OPEN)	(191:US,CND,E92/192CK:US,E92)
12	4-214-676-01	INSULATOR (191:US,CND,E92/192CK:US,E92)	
12	4-214-676-11	INSULATOR	(190/191:EXCEPT US,CND,E92/191SR/192CK:EXCEPT US,E92/193)
13	A-3323-133-A	MAIN BOARD, COMPLETE (193:EXCEPT FR,BR)	
13	A-3323-134-A	MAIN BOARD, COMPLETE (190:EXCEPT FR/191:EXCEPT US,CND,E92,FR/191SR:EXCEPT FR/192CK:EXCEPT US,E92,FR)	
13	A-3323-196-A	MAIN BOARD, COMPLETE (193:BR)	
13	A-3323-249-A	MAIN BOARD, COMPLETE	(190:FR/191:FR/191SR:FR/192CK:FR)
13	A-3323-250-A	MAIN BOARD, COMPLETE (193:FR)	
13	A-3323-255-A	MAIN BOARD, COMPLETE	(191:US,CND,E92/192CK:US,E92)
14	4-218-592-01	CUSHION (191:US,CND,E92/192CK:US,E92)	
14	4-218-592-11	CUSHION (190/191:EXCEPT US,CND,E92/191SR/192CK:EXCEPT US,E92/193)	
15	4-219-189-01	SHEET, RADIATION	
LCD801	1-803-508-11	DISPLAY PANEL, LIQUID CRYSTAL	

3. DIAGRAMS

• PRINTED WIRING BOARD (SIDE A: TYPE-I/II, SIDE B: TYPE-I)

• **Semiconductor Location (-11)**

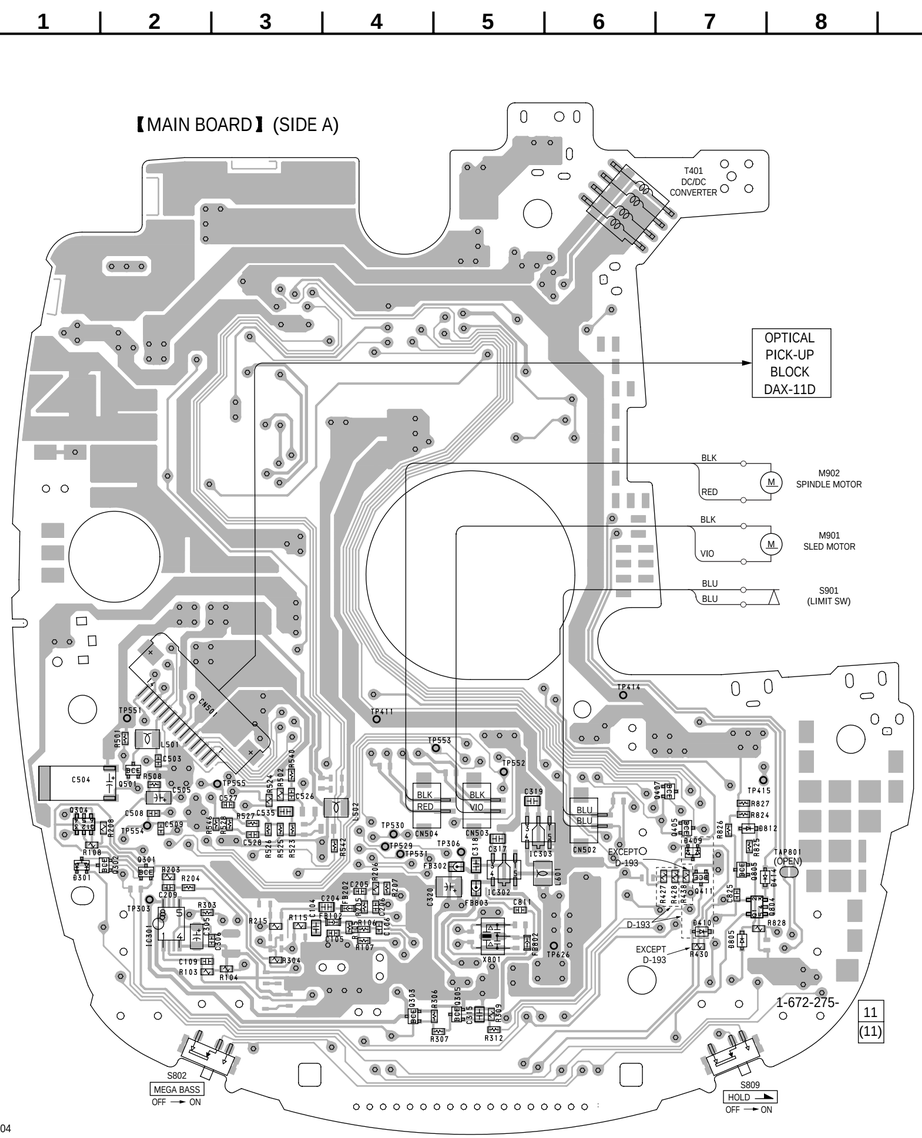
Ref. No.	Location
D301	H-1
D401	C-17
D402	B-16
D407	C-13
D408	B-15
(D409)	H-7
(D410)	I-7
D411	C-14
(D412)	D-13
D413	C-16
D414	H-7
D415	C-15
D416	E-16
D802	J-15
D803	I-11
D804	I-11
D805	I-7
D806	I-11
D807	I-11
D811	I-15
D812	H-7
IC301	I-2
IC302	H-5
IC303	H-5
IC401	C-15
(IC403)	D-13
IC501	G-16
IC601	D-15
IC801	I-13
Q301	H-2
Q302	H-2
Q303	I-4
Q304	H-1
Q305	I-5
Q306	I-16
Q307	I-16
Q401	C-16
Q403	C-13
Q404	C-13
Q405	H-7
(Q406)	G-17
Q407	G-7
(Q408)	D-16
Q409	B-16
Q410	D-14
(Q411)	H-7
Q412	B-16
Q413	E-16
Q414	E-16
Q415	E-16
Q501	G-2
Q804	H-7
Q805	H-7

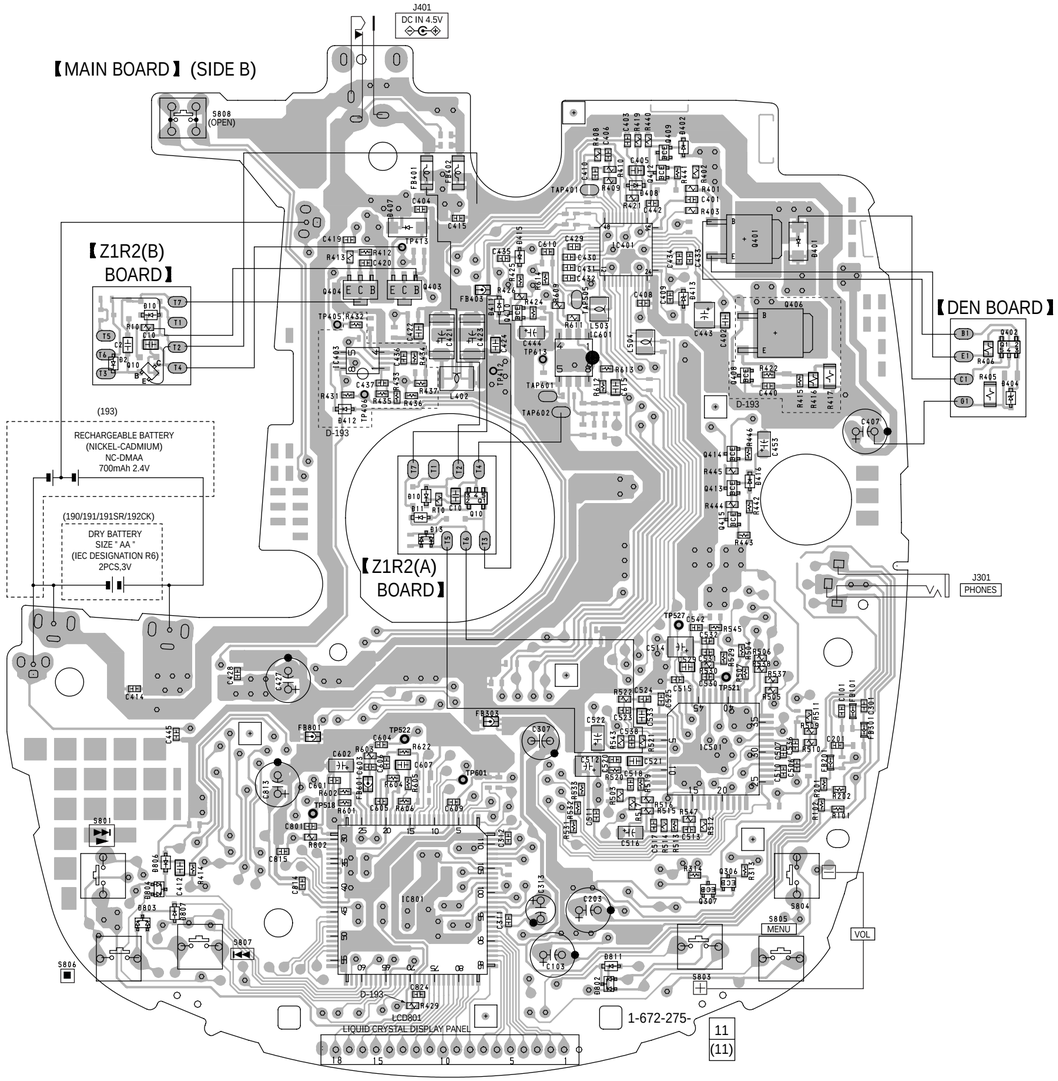
( ) : D-193 only

This note is common for printed wiring boards:

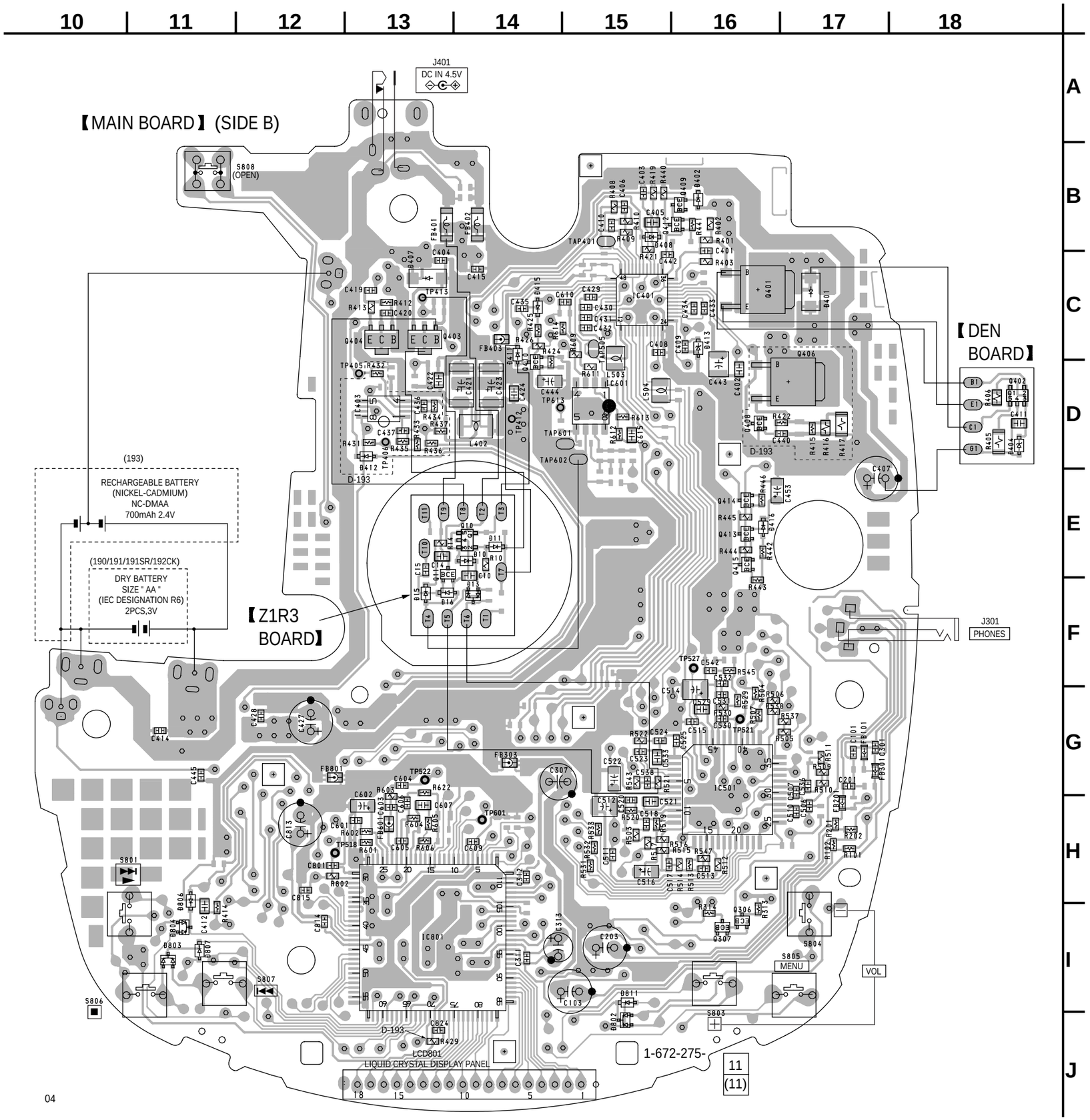
• ○——○ : parts extracted from the component side.
• ○ : Through hole.
• ▒▒▒ : Pattern from the side which enables seeing.
(The other layer's patterns are not indicated.)

Caution:
Pattern face side: (Side B) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A) Parts on the parts face side seen from the parts face are indicated.





• PRINTED WIRING BOARD (SIDE B: TYPE-II)



• DEN BOARD (for TYPE-I/II)

Ref. No.	Part No.	Description			Remark
D404	8-719-158-02	DIODE RD3.9SB2			
Q402	8-729-903-10	TRANSISTOR	FMW1		
R405	1-216-174-00	METAL CHIP	100	5%	1/8W
R406	1-216-033-00	METAL CHIP	220		

• Z1R2 (A) BOARD (for TYPE-I)

Ref. No.	Part No.	Description			Remark
C10	1-109-982-11	CERAMIC CHIP	1	10%	10V
D10	8-719-049-09	DIODE 1SS367			
D11	8-719-049-09	DIODE 1SS367			
D13	8-719-941-23	DIODE DA204U			
Q10	8-729-035-63	TRANSISTER	FMG9A		
R10	1-216-829-11	METAL CHIP	4.7K	5%	1/16W

• Z1R2 (B) BOARD (for TYPE-I)

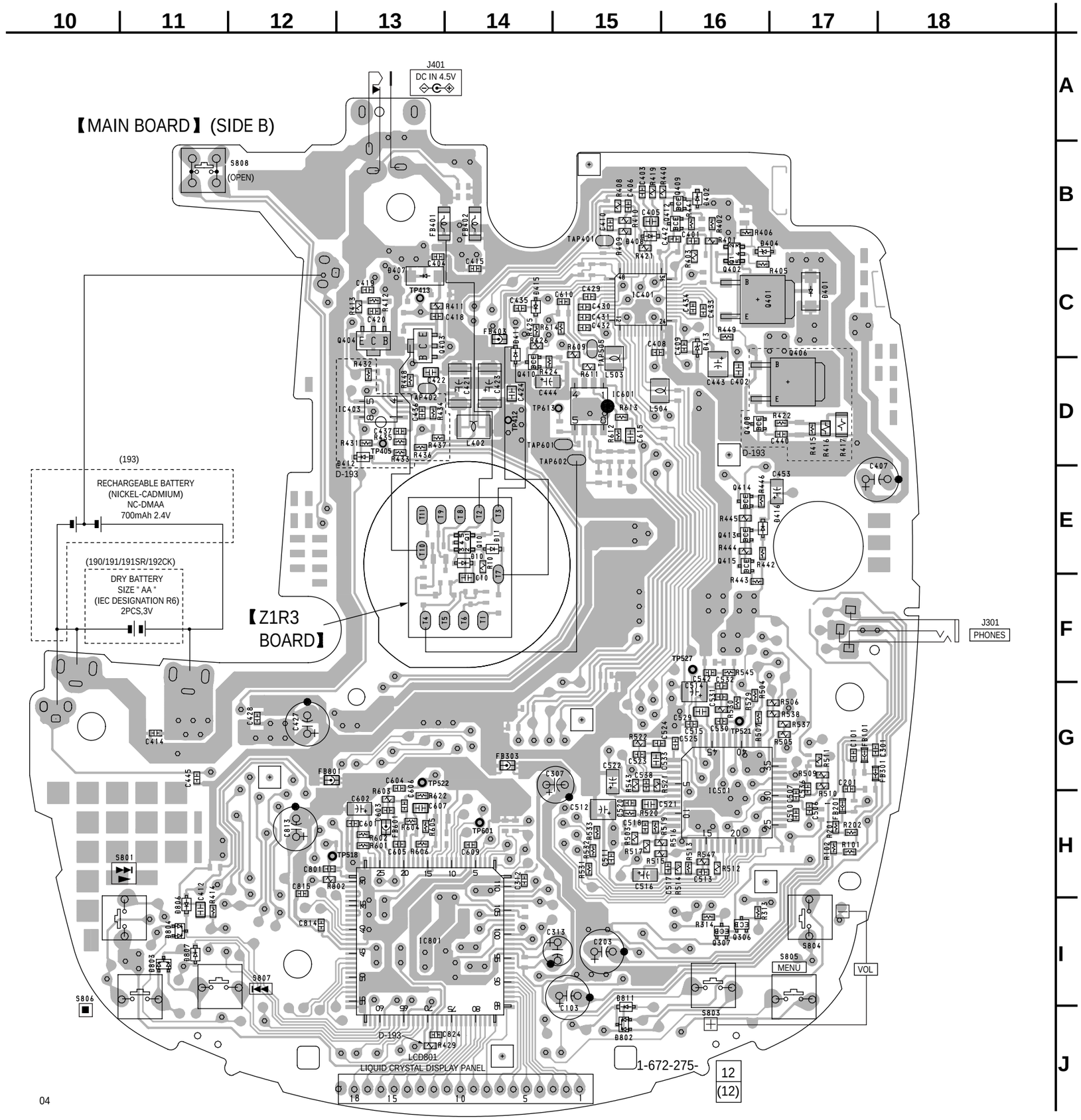
Ref. No.	Part No.	Description			Remark
C2	1-164-217-11	CERAMIC CHIP	150P	5%	50V
C10	1-108-982-11	CERAMIC CHIP	1	10%	10V
D2	8-719-049-09	DIODE 1SS367			
D10	8-719-049-09	DIODE 1SS367			
Q10	8-729-924-39	TRANSISTER	DTC143XU		
R10	1-216-811-11	METAL CHIP	150	5%	1/16W

• Z1R3 BOARD (for TYPE-II)

Ref. No.	Part No.	Description			Remark
C10	1-109-982-11	CERAMIC CHIP	1	10%	10V
C14	1-109-982-11	CERAMIC CHIP	1	10%	10V
C15	1-164-217-11	CERAMIC CHIP	150P	5%	50V
D10	8-719-049-09	DIODE 1SS367			
D11	8-719-049-09	DIODE 1SS367			
D13	8-719-941-23	DIODE DA204U			
D15	8-719-049-09	DIODE 1SS367			
D16	8-719-049-09	DIODE 1SS367			
Q10	8-729-035-63	TRANSISTER	FMG9A		
Q11	8-729-029-11	TRANSISTER	DTC143XU		
R10	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R14	1-216-811-11	METAL CHIP	150	5%	1/16W

Note: DEN, Z1R2 (A), Z1R2 (B) and Z1R3 boards are not supplied.

• **PRINTED WIRING BOARDS (SIDE B: TYPE-Ⅲ)**



• **Z1R2 (A) BOARD (for TYPE-Ⅲ)**

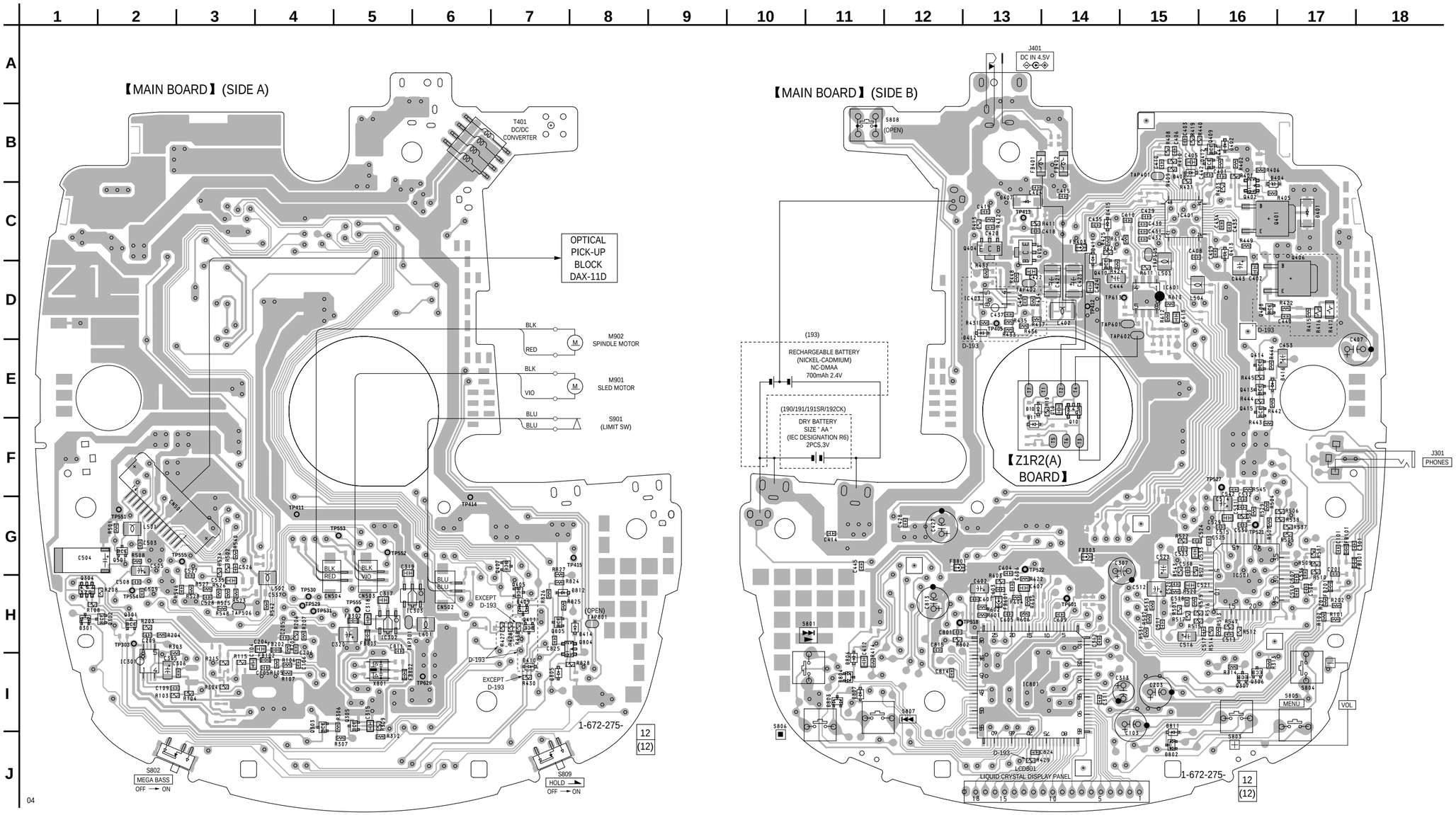
Ref. No.	Part No.	Description			Remark
C10	1-109-982-11	CERAMIC CHIP	1	10%	10V
D10	8-719-049-09	DIODE 1SS367			
D11	8-719-049-09	DIODE 1SS367			
Q10	8-729-035-63	TRANSISTER	FMG9A		
R10	1-216-829-11	METAL CHIP	4.7K	5%	1/16W

• **Z1R3 BOARD (for TYPE-Ⅳ)**

Ref. No.	Part No.	Description			Remark
C10	1-109-982-11	CERAMIC CHIP	1	10%	10V
D10	8-719-049-09	DIODE 1SS367			
D11	8-719-049-09	DIODE 1SS367			
Q10	8-729-035-63	TRANSISTER	FMG9A		
R10	1-216-829-11	METAL CHIP	4.7K	5%	1/16W

Note: Z1R2 (A), and Z1R3 boards are not supplied.

• PRINTED WIRING BOARDS (SIDE A: TYPE-Ⅲ/Ⅳ, SIDE B: TYPE-Ⅲ)



• Semiconductor Location (-12)

Ref. No.	Location
D301	H-1
D401	C-17
D402	B-16
D404	B-16
D407	C-13
D408	B-15
(D409)	H-7
(D410)	I-7
D411	C-14
(D412)	D-13
D413	C-16
D414	H-7
D415	C-14
D416	E-16
D802	J-15
D803	I-11
D804	I-11
D805	I-7
D806	I-11
D807	I-11
D811	I-15
D812	H-7
IC301	I-2
IC302	H-5
IC303	H-5
IC401	C-15
(IC403)	D-13
IC501	G-16
IC601	D-15
IC801	I-13
Q301	H-2
Q302	H-2
Q303	I-4
Q304	H-1
Q305	I-5
Q306	I-16
Q307	I-16
Q401	C-16
Q402	B-16
Q403	C-13
Q404	C-13
Q405	H-7
(Q406)	D-17
Q407	G-7
(Q408)	D-16
Q409	B-16
Q410	D-14
(Q411)	H-7
Q412	B-16
Q413	E-16
Q414	E-16
Q415	E-16
Q501	G-2
Q804	H-7
Q805	H-7

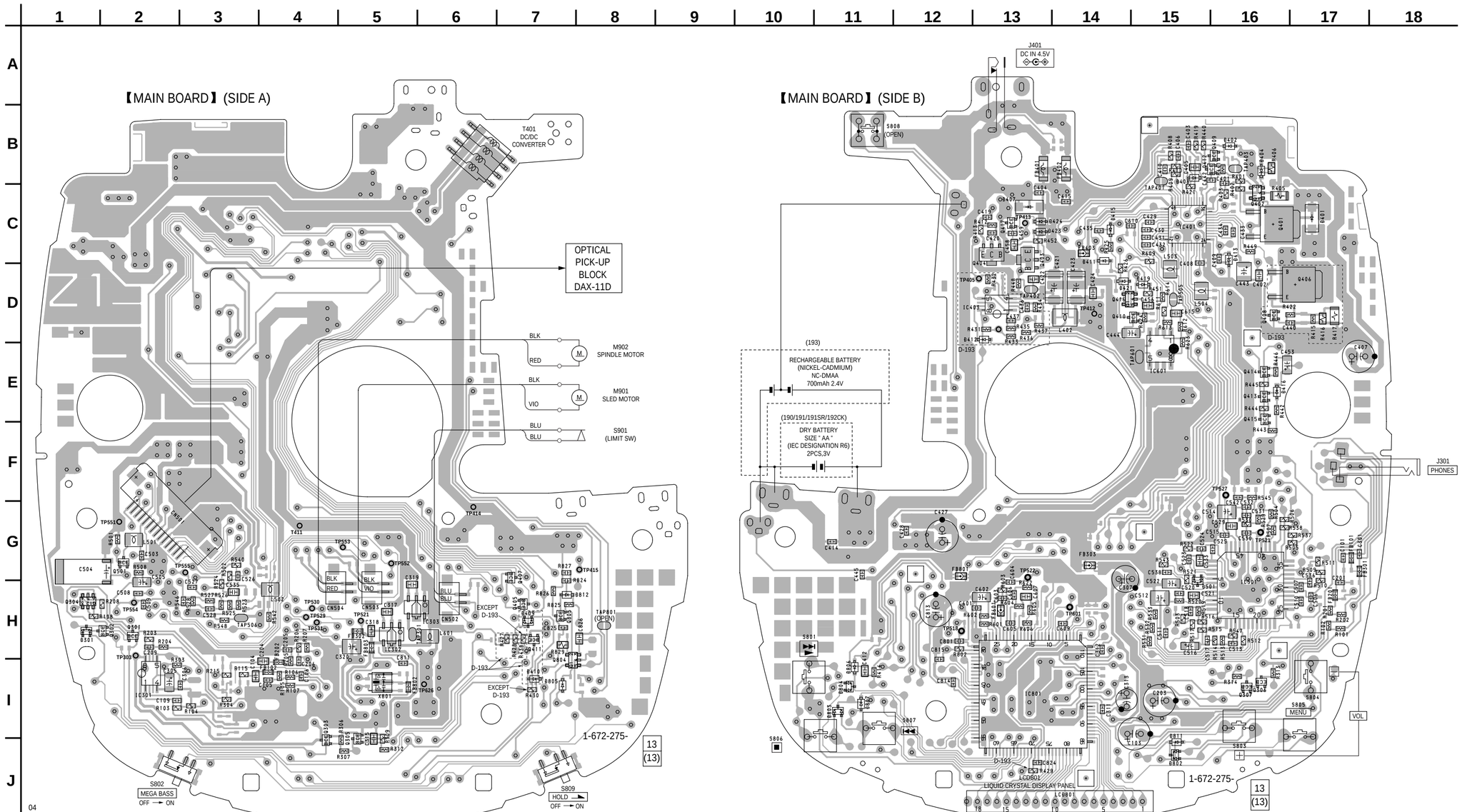
( ) : D-193 only

• PRINTED WIRING BOARD (TYPE-V)

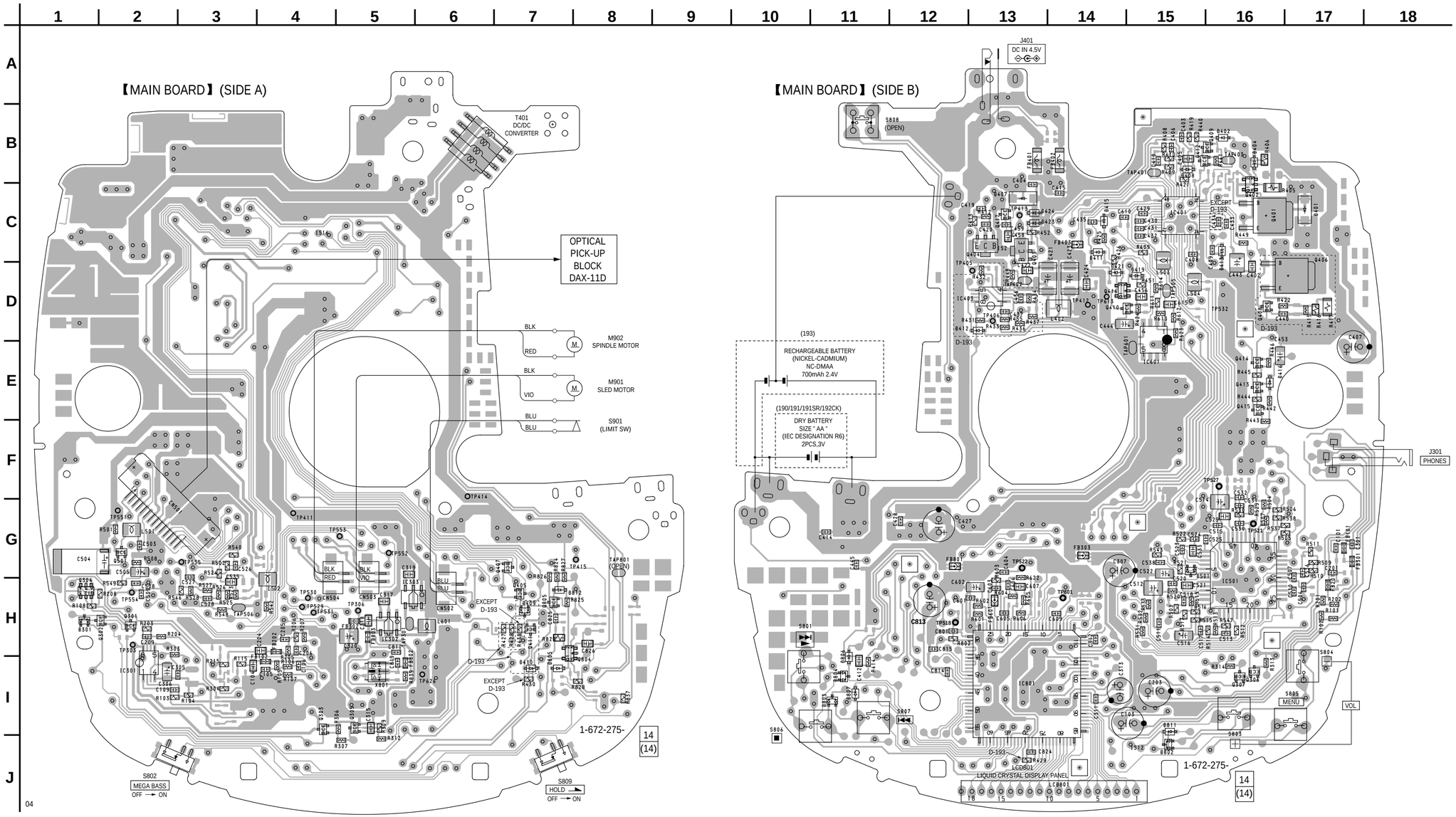
• **Semiconductor Location (-13)**

Ref. No.	Location
D301	H-1
D401	C-17
D402	B-16
D404	B-16
D407	C-13
D408	B-15
(D409)	H-7
(D410)	I-7
D411	C-14
(D412)	D-13
D413	C-16
D415	C-15
D416	E-16
D419	D-15
D421	D-14
D423	C-13
D424	C-13
D501	G-15
D802	J-15
D803	I-11
D804	I-11
D805	I-7
D806	I-11
D807	I-11
D811	I-15
D812	H-7
IC301	I-2
IC302	H-5
IC303	H-5
IC401	C-15
(IC403)	D-13
IC501	G-16
IC601	D-15
IC801	I-13
Q301	H-2
Q302	H-2
Q303	I-4
Q304	H-1
Q305	I-5
Q306	I-16
Q307	I-16
Q401	C-16
Q402	B-16
Q403	C-13
Q404	C-13
Q405	H-7
(Q406)	D-17
Q407	G-7
(Q408)	D-16
Q409	B-16
Q410	D-14
(Q411)	H-7
Q412	B-16
Q413	E-16
Q414	E-16
Q415	E-16
Q416	D-14
Q417	C-13
Q501	G-2
Q804	H-7
Q805	H-7

( ) : D-193 only



• PRINTED WIRING BOARD (TYPE-VI)



• **Semiconductor Location (-14)**

Ref. No.	Location
D301	H-1
D401	C-17
D402	B-16
D404	B-16
D407	C-13
D408	B-15
(D409)	H-7
(D410)	I-7
D411	C-14
(D412)	D-13
D413	C-16
D415	C-14
D416	E-16
D419	D-15
D421	D-14
D423	C-13
D424	C-13
D501	H-15
D802	J-15
D803	I-11
D804	I-11
D805	I-7
D806	I-11
D807	I-11
D811	I-15
D812	H-7
IC301	I-2
IC302	H-5
IC303	H-5
IC401	C-15
(IC403)	D-13
IC501	G-16
IC601	D-15
IC801	I-13
Q301	H-2
Q302	H-2
Q303	I-4
Q304	H-1
Q305	I-5
Q306	I-16
Q307	I-16
Q401	C-16
Q402	B-16
Q403	C-13
Q404	C-13
Q405	H-7
(Q406)	D-17
Q407	G-7
(Q408)	D-16
Q409	B-16
Q410	D-14
(Q411)	H-7
Q412	B-16
Q413	E-16
Q414	E-16
Q415	E-16
Q416	D-14
Q417	C-13
Q501	G-2
Q804	H-7
Q805	H-7

( ) : D-193 only

This note is common for schematic diagrams:

- All capacitors are in µF unless otherwise noted. pF: µµF
  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ▭ : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- B+ : B+ Line.
- Power voltage is dc 3 V and fed with regulated dc power supply from battery terminal.
- Voltages and waveforms are dc with respect to ground in playback mode.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : CD

• Waveforms

① 1.3Vp-p — 0.5µsec/div — TP522 (RF)

② 100mVp-p — 20µsec/div — TP527 (FEO)

③ 80mVp-p — 20µsec/div — TP518 (FOK)

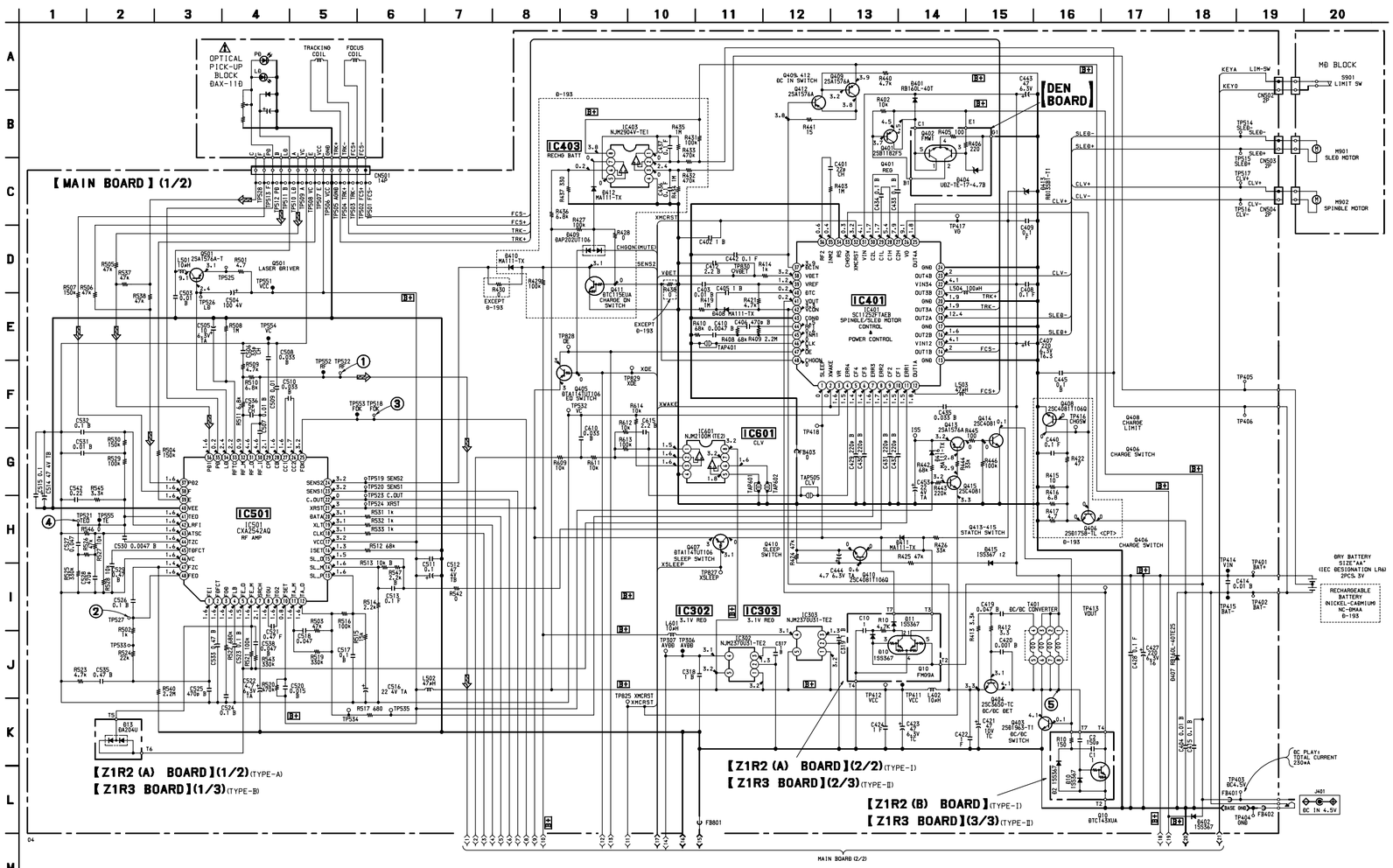
④ 100mVp-p — 20µsec/div — TP521 (TEO)

⑤ 4.0Vp-p — 4.6µsec — 3µsec/div — Q403 Ⓒ

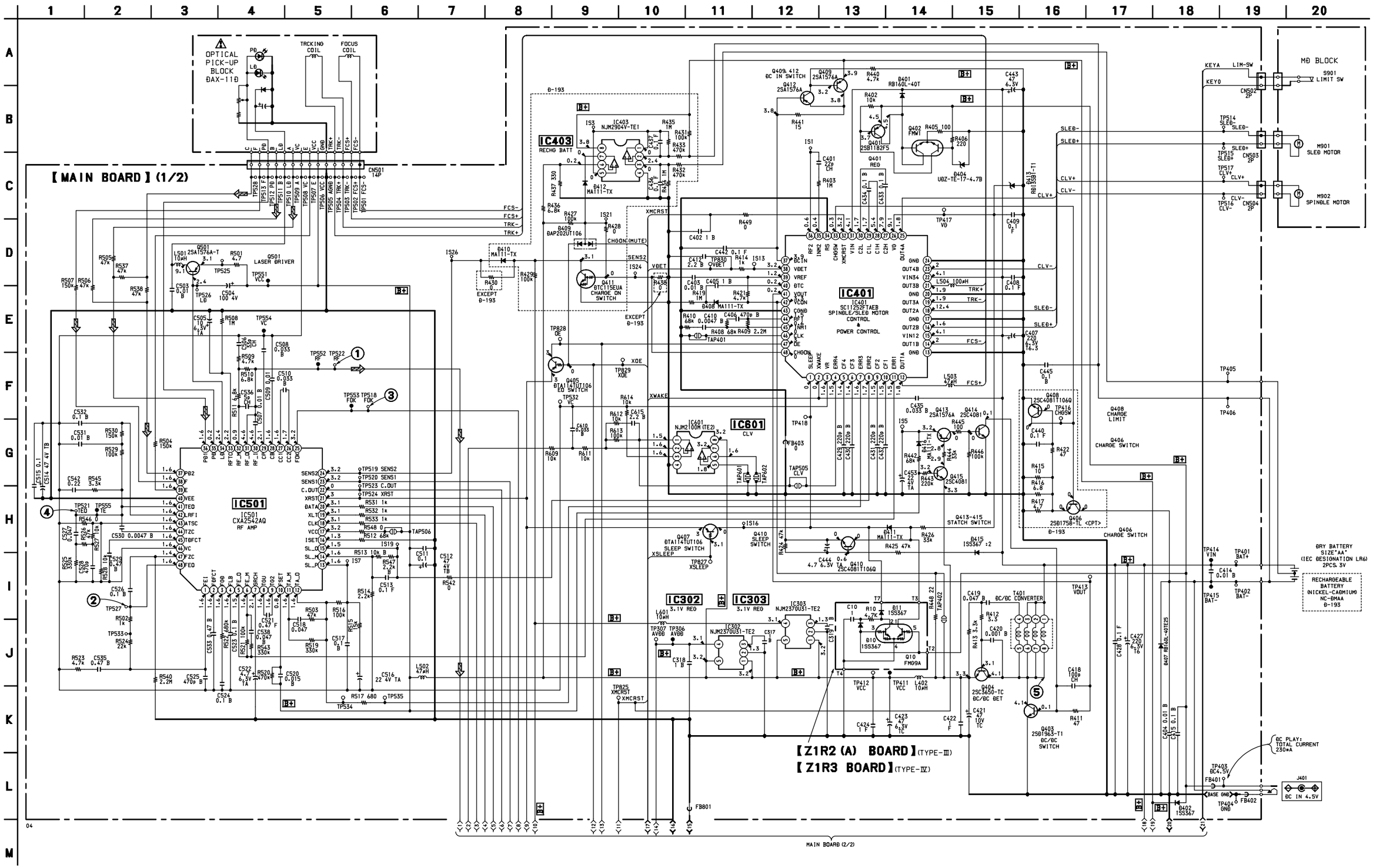
⑥ 1.5Vp-p — 7.6µsec — 2µsec/div — TP601 (MDP)

⑦ 1.4Vp-p — 16.9MHz — 0.05µsec/div — IC801 (104)

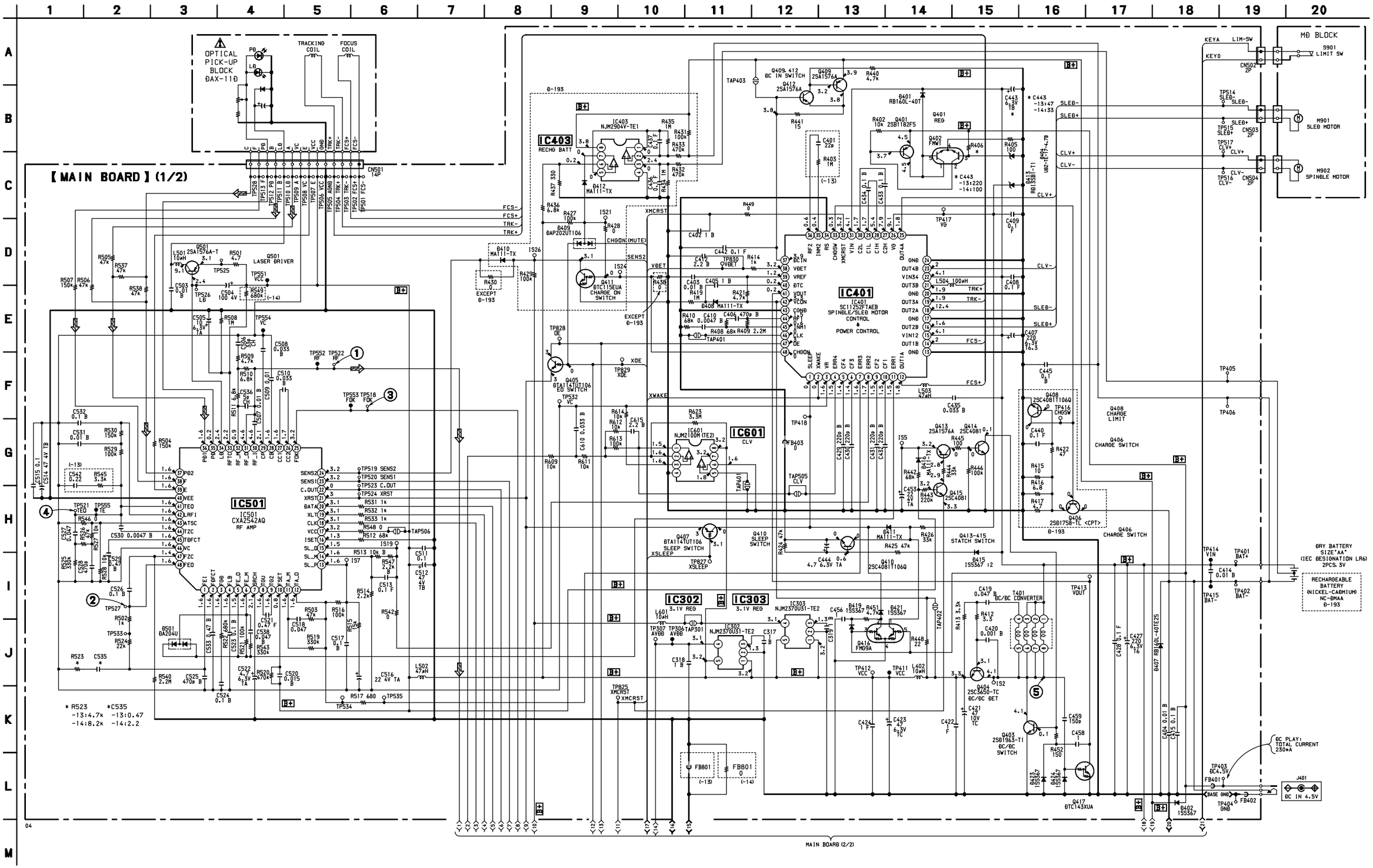
• SCHEMATIC DIAGRAM — MAIN SECTION (1/2) — (TYPE-I/II)



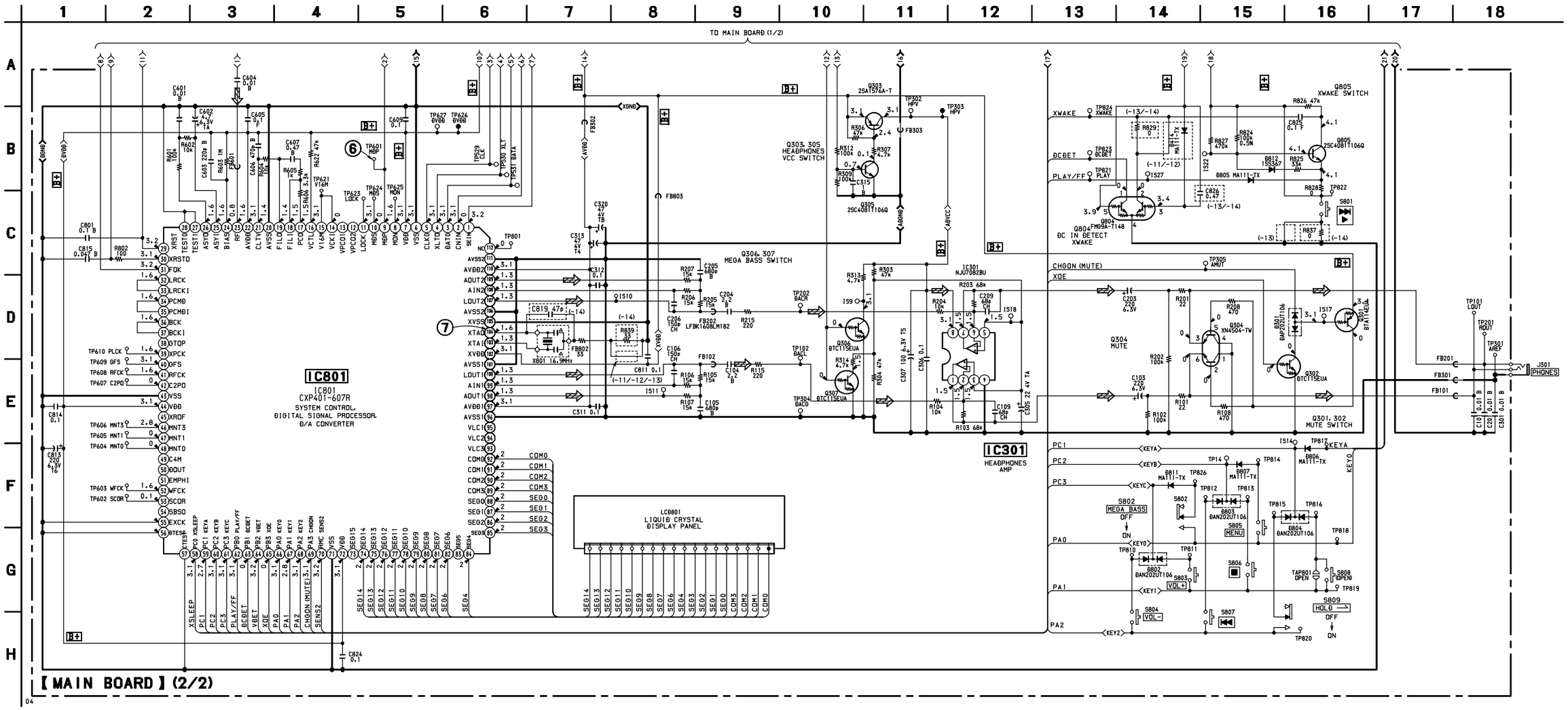
• SCHEMATIC DIAGRAM — MAIN SECTION (1/2) — (TYPE-Ⅲ/Ⅳ)



• SCHEMATIC DIAGRAM — MAIN SECTION (1/2) — (TYPE-V/VI)



• SCHEMATIC DIAGRAM — MAIN SECTION (2/2) — (TYPE-I/II/III/IV/V/VI)



4. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- RESISTORS
  All resistors are in ohms.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ, for example:
  uA.. : µA.. uPA.. : µPA..
  uPB.. : µPB.. uPC.. : µPC.. uPD.. : µPD..
- CAPACITORS
  uF : µF
- COILS
  uH : µH

- Abbreviation
  AR : Argentina model
  AUS : Australian model
  BR : Brazilian model
  CH : Chinese model
  CND : Canadian model
  E13 : AC 220-230V area in E model
  E33 : AC 100-240V area in E model
  E92 : AC 120V area in E model
  EA : Saudi Arabia model
  EE : East European model
  FR : French model
  G : German model
  MX : Mexican model
- Board part number suffix
  -11 : Number suffix is -11
  -12 : Number suffix is -12
  -13 : Number suffix is -13
  -14 : Number suffix is -14

MAIN

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark
	A-3323-133-A	MAIN BOARD, COMPLETE (193:EXCEPT FR,BR)	
	A-3323-134-A	MAIN BOARD, COMPLETE (190:EXCEPT FR/191:EXCEPT US,CND,E92,FR/191SR:EXCEPT FR/192CK:EXCEPT US,E92,FR)	
	A-3323-196-A	MAIN BOARD, COMPLETE (193:BR)	
	A-3323-249-A	MAIN BOARD, COMPLETE (190:FR/191:FR/191SR:FR/192CK:FR)	
	A-3323-250-A	MAIN BOARD, COMPLETE (193:FR)	
	A-3323-255-A	MAIN BOARD, COMPLETE (191:US,CND,E92/192CK:US,E92) **********	
	4-214-672-01	HOLDER (LCD)	
	4-214-677-01	PLATE (A), CHARGE DETECTION (193)	
	4-214-678-01	PLATE (B), CHARGE DETECTION (193)	
	4-978-695-01	PLATE, TERMINAL, BATTERY	
		< CAPACITOR >	
C101	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C103	1-124-635-00	ELECT 220uF 20% 6.3V	
C104	1-125-838-11	CERAMIC CHIP 2.2uF 10% 6.3V	
C105	1-162-963-11	CERAMIC CHIP 680PF 10% 50V	
C106	1-164-217-11	CERAMIC CHIP 150PF 5% 50V	
C109	1-162-925-11	CERAMIC CHIP 68PF 5% 50V	
C201	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C203	1-124-635-00	ELECT 220uF 20% 6.3V	
C204	1-125-838-11	CERAMIC CHIP 2.2uF 10% 6.3V	
C205	1-162-963-11	CERAMIC CHIP 680PF 10% 50V	
C206	1-164-217-11	CERAMIC CHIP 150PF 5% 50V	
C209	1-162-925-11	CERAMIC CHIP 68PF 5% 50V	
C301	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C305	1-104-847-11	TANTAL. CHIP 22uF 20% 4V	
C306	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C307	1-126-382-11	ELECT 100uF 20% 6.3V	
C311	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C312	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C313	1-126-513-11	ELECT 47uF 20% 4V	
C315	1-109-982-11	CERAMIC CHIP 1uF 10% 10V	
C317	1-109-982-11	CERAMIC CHIP 1uF 10% 10V	
C318	1-109-982-11	CERAMIC CHIP 1uF 10% 10V	
C319	1-109-982-11	CERAMIC CHIP 1uF 10% 10V	
C320	1-110-569-11	TANTAL. CHIP 47uF 20% 4V	
C401	1-162-919-11	CERAMIC CHIP 22PF 5% 50V (EXCEPT -14)	
C402	1-109-982-11	CERAMIC CHIP 1uF 10% 10V	
C403	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C404	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C405	1-109-982-11	CERAMIC CHIP 1uF 10% 10V	
C406	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C407	1-124-635-00	ELECT 220uF 20% 6.3V	
C408	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C409	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C410	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	
C412	1-125-838-11	CERAMIC CHIP 2.2uF 10% 6.3V	
C414	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C415	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C418	1-162-927-11	CERAMIC CHIP 100PF 5% 50V (-12)	
C419	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	
C420	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C421	1-113-642-11	TANTAL. CHIP 47uF 20% 10V	
C422	1-164-346-11	CERAMIC CHIP 1uF 16V	
C423	1-104-753-11	TANTAL. CHIP 47uF 20% 6.3V	
C424	1-164-346-11	CERAMIC CHIP 1uF 16V	
C427	1-124-635-00	ELECT 220uF 20% 6.3V	
C428	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C429	1-162-960-11	CERAMIC CHIP 220PF 10% 50V	
C430	1-162-960-11	CERAMIC CHIP 220PF 10% 50V	
C431	1-162-960-11	CERAMIC CHIP 220PF 10% 50V	
C432	1-162-960-11	CERAMIC CHIP 220PF 10% 50V	
C433	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C434	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C435	1-164-677-11	CERAMIC CHIP 0.033uF 10% 16V	
C436	1-164-156-11	CERAMIC CHIP 0.1uF 25V (193)	
C437	1-164-156-11	CERAMIC CHIP 0.1uF 25V (193)	
C440	1-164-156-11	CERAMIC CHIP 0.1uF 25V (193)	
C442	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C443	1-110-569-11	TANTAL. CHIP 47uF 20% 6.3V (-11/-12/-13)	
C443	1-113-682-11	TANTAL. CHIP 33uF 20% 10V (-14)	
C444	1-135-181-21	TANTALUM CHIP 4.7uF 20% 6.3V	
C445	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C453	1-104-847-11	TANTAL. CHIP 22uF 20% 4V	
C456	1-109-982-11	CERAMIC CHIP 1uF 10% 10V (-13/-14)	

MAIN

Ref. No.	Part No.	Description	Remark
C458	1-109-982-11	CERAMIC CHIP 1uF 10% 10V (-13/-14)	
C459	1-164-217-11	CERAMIC CHIP 150PF 5% 50V (-13/-14)	
C503	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C504	1-110-409-21	ELECT CHIP 100uF 20% 4V	
C505	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C506	1-162-921-11	CERAMIC CHIP 33PF 5% 50V	
C507	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C508	1-164-677-11	CERAMIC CHIP 0.033uF 10% 16V	
C509	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C510	1-164-677-11	CERAMIC CHIP 0.033uF 10% 16V	
C511	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C512	1-110-569-11	TANTAL. CHIP 47uF 20% 4V	
C513	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C514	1-110-569-11	TANTAL. CHIP 47uF 20% 4V	
C515	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C516	1-104-847-11	TANTAL. CHIP 22uF 20% 4V	
C517	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C518	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	
C520	1-164-245-11	CERAMIC CHIP 0.015uF 10% 25V	
C521	1-107-823-11	CERAMIC CHIP 0.47uF 10% 16V (-14)	
C521	1-164-005-11	CERAMIC CHIP 0.47uF 25V (-11/-12/-13)	
C522	1-135-181-21	TANTALUM CHIP 4.7uF 20% 6.3V	
C523	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C524	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C525	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C526	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C527	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	
C528	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C529	1-107-823-11	CERAMIC CHIP 0.47uF 10% 16V	
C530	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	
C531	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C532	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C533	1-107-823-11	CERAMIC CHIP 0.47uF 10% 16V	
C535	1-107-823-11	CERAMIC CHIP 0.47uF 10% 16V (-11/-12/-13)	
C535	1-125-838-11	CERAMIC CHIP 2.2uF 10% 6.3V (-14)	
C536	1-162-910-11	CERAMIC CHIP 5PF 0.25PF 50V	
C538	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	
C542	1-115-467-11	CERAMIC CHIP 0.22uF 10% 10V (EXCEPT -14)	
C601	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C602	1-135-181-21	TANTALUM CHIP 4.7uF 20% 6.3V	
C603	1-162-960-11	CERAMIC CHIP 220PF 10% 50V	
C604	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C605	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C606	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C607	1-107-823-11	CERAMIC CHIP 0.47uF 10% 16V	
C609	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C610	1-164-677-11	CERAMIC CHIP 0.033uF 10% 16V	
C615	1-125-838-11	CERAMIC CHIP 2.2uF 10% 6.3V	
C801	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C811	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C813	1-124-635-00	ELECT 220uF 20% 6.3V	
C814	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C815	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	
C819	1-162-923-11	CERAMIC CHIP 47PF 5% 50V (-14)	
C824	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C825	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C826	1-107-823-11	CERAMIC CHIP 0.47uF 10% 16V (-13/-14)	
		< CONNECTOR >	
CN501	1-566-530-11	CONNECTOR, FPC (ZIF) 14P	
* CN502	1-695-320-51	PIN, CONNECTOR (1.5MM) (SMD) 2P	
* CN503	1-695-320-31	PIN, CONNECTOR (1.5MM) (SMD) 2P	
CN504	1-695-320-21	PIN, CONNECTOR (1.5MM) (SMD) 2P	
		< DIODE >	
D301	8-719-941-09	DIODE DAP202UT106	
D401	8-719-048-98	DIODE RB160L-40TE25	
D402	8-719-988-61	DIODE 1SS355TE-17	
D404	8-719-976-96	DIODE UDZ-TE-17-4.7B (-12/-13/EXCEPT 193:-14)	
D404	8-719-422-12	DIODE MA8039 (193:-14)	
D407	8-719-048-98	DIODE RB160L-40TE25	
D408	8-719-988-61	DIODE 1SS355TE-17	
D409	8-719-941-09	DIODE DAP202UT106 (193)	
D410	8-719-988-61	DIODE 1SS355TE-17 (193)	
D411	8-719-988-61	DIODE 1SS355TE-17	
D412	8-719-988-61	DIODE 1SS355TE-17 (193)	
D413	8-719-423-35	DIODE MA8120-H-TX	
D414	8-719-988-61	DIODE 1SS355TE-17 (-11/-12)	
D415	8-719-049-09	DIODE 1SS367-T3SONY	
D416	8-719-988-61	DIODE 1SS355TE-17	
D419	8-719-049-09	DIODE 1SS367-T3SONY (-13/-14)	
D421	8-719-049-09	DIODE 1SS367-T3SONY (-13/-14)	
D423	8-719-049-09	DIODE 1SS367-T3SONY (-13/-14)	
D424	8-719-049-09	DIODE 1SS367-T3SONY (-13/-14)	
D501	8-719-941-23	DIODE DA204U (-13/-14)	
D802	8-719-941-86	DIODE DAN202U	
D803	8-719-941-86	DIODE DAN202U	
D804	8-719-941-86	DIODE DAN202U	
D805	8-719-941-86	DIODE DAN202U	
D806	8-719-988-61	DIODE 1SS355TE-17	
D807	8-719-988-61	DIODE 1SS355TE-17	
D811	8-719-988-61	DIODE 1SS355TE-17	
D812	8-719-049-09	DIODE 1SS367-T3SONY	
		< FERRITE BEAD >	
FB101	1-469-121-21	FERRITE, EMI (SMD) (-14)	
FB101	1-500-444-11	FERRITE, EMI (SMD) (-11/-12-13)	
FB102	1-500-444-11	FERRITE, EMI (SMD)	

Ref. No.	Part No.	Description	Remark
FB201	1-469-121-21	FERRITE, EMI (SMD) (-14)	
FB201	1-500-444-11	FERRITE, EMI (SMD) (-11/-12-13)	
FB202	1-500-444-11	FERRITE, EMI (SMD)	
FB301	1-469-121-21	FERRITE, EMI (SMD) (-14)	
FB301	1-500-444-11	FERRITE, EMI (SMD) (-11/-12-13)	
FB302	1-500-444-11	FERRITE, EMI (SMD)	
FB303	1-469-134-21	FERRITE, EMI (SMD)	
FB401	1-500-451-11	FERRITE, EMI (SMD)	
FB402	1-500-451-11	FERRITE, EMI (SMD)	
FB403	1-216-295-00	SHORT 0	
FB601	1-414-235-22	INDUCTOR, FERRITE BEAD	
FB801	1-500-444-11	FERRITE, EMI (SMD) (-11/-12/-13)	
FB801	1-216-295-00	SHORT 0	(-14)
FB802	1-216-803-11	METAL CHIP 33 5%	1/16W
FB803	1-414-916-11	FERRITE, EMI (SMD)	
		< IC >	
IC301	8-759-573-33	IC NJU7082BV(TE2)	
IC302	8-759-486-53	IC NJM2370U31-TE2	
IC303	8-759-486-53	IC NJM2370U31-TE2	
IC401	8-759-570-22	IC SC111252FTAEB	
IC403	8-759-337-40	IC NJM2904V-TE1 (193)	
IC501	8-752-083-24	IC CXA2542AQ	
IC601	8-759-701-39	IC NJM2100M(TE2)	
IC801	8-752-904-63	IC CXP401-607R	
		< JACK >	
J301	1-774-804-11	JACK (PHONES)	
J401	1-778-153-21	JACK, DC (POLARITY UNIFIED TYPE)	(DC IN 4.5V)
		< COIL >	
L402	1-414-431-11	INDUCTOR 10uH	
L501	1-414-398-11	INDUCTOR 10uH	
L502	1-414-402-11	INDUCTOR 47uH	
L503	1-414-402-11	INDUCTOR 47uH	
L504	1-414-404-11	INDUCTOR 100uH	
L601	1-414-398-11	INDUCTOR 10uH	
		< LIQUID CRYSTAL DISPLAY >	
LCD801	1-803-508-11	DISPLAY PANEL, LIQUID CRYSTAL	
		< TRANSISTOR >	
Q301	8-729-028-73	TRANSISTOR DTA114EUA-T106	
Q302	8-729-029-00	TRANSISTOR DTC115EUA-T106	
Q303	8-729-026-53	TRANSISTOR 2SA1576A-T106-QR	
Q304	8-729-425-18	TRANSISTOR XN4504-TX	
Q305	8-729-905-34	TRANSISTOR 2SC4081T106Q	
Q306	8-729-029-00	TRANSISTOR DTC115EUA-T106	
Q307	8-729-029-00	TRANSISTOR DTC115EUA-T106	
Q401	8-729-921-93	TRANSISTOR 2SB1182F5-QR-TLQR	
Q402	8-729-903-10	TRANSISTOR FMW1-T-148 (-12/-13/-14)	
Q403	8-729-923-36	TRANSISTOR 2SD1963-T100-R	

Ref. No.	Part No.	Description	Remark
Q404	8-729-022-67	TRANSISTOR 2SC3650-TD	
Q405	8-729-905-96	TRANSISTOR DTA114TU	
Q406	8-729-922-34	TRANSISTOR 2SD1758-TLQR (193)	
Q407	8-729-905-96	TRANSISTOR DTA114TUT106	
Q408	8-729-905-34	TRANSISTOR 2SC4081T106Q (193)	
Q409	8-729-026-53	TRANSISTOR 2SA1576A-T106-QR	
Q410	8-729-905-34	TRANSISTOR 2SC4081T106Q	
Q411	8-729-029-00	TRANSISTOR DTC115EUA-T106 (193)	
Q412	8-729-026-53	TRANSISTOR 2SA1576A-T106-QR	
Q413	8-729-026-53	TRANSISTOR 2SA1576A-T106-QR	
Q414	8-729-905-34	TRANSISTOR 2SC4081T106Q	
Q415	8-729-905-34	TRANSISTOR 2SC4081T106Q	
Q416	8-729-035-63	TRANSISTOR FMG9A-T148 (-13/-14)	
Q417	8-729-924-39	TRANSISTOR DTC143XU (-13/-14)	
Q501	8-729-026-53	TRANSISTOR 2SA1576A-T106-QR	
Q804	8-729-035-63	TRANSISTOR FMG9A-T148	
Q805	8-729-905-34	TRANSISTOR 2SC4081T106Q	
		< RESISTOR >	
R101	1-216-801-11	METAL CHIP 22 5%	1/16W
R102	1-216-845-11	METAL CHIP 100K 5%	1/16W
R103	1-216-843-11	METAL CHIP 68K 5%	1/16W
R104	1-216-833-00	RES,CHIP 10K 5%	1/16W
R105	1-216-835-11	METAL CHIP 15K 5%	1/16W
R106	1-216-835-11	METAL CHIP 15K 5%	1/16W
R107	1-216-835-11	METAL CHIP 15K 5%	1/16W
R108	1-216-817-11	METAL CHIP 470 5%	1/16W
R115	1-216-813-11	METAL CHIP 220 5%	1/16W
R201	1-216-801-11	METAL CHIP 22 5%	1/16W
R202	1-216-845-11	METAL CHIP 100K 5%	1/16W
R203	1-216-843-11	METAL CHIP 68K 5%	1/16W
R204	1-216-833-00	RES,CHIP 10K 5%	1/16W
R205	1-216-835-11	METAL CHIP 15K 5%	1/16W
R206	1-216-835-11	METAL CHIP 15K 5%	1/16W
R207	1-216-835-11	METAL CHIP 15K 5%	1/16W
R208	1-216-817-11	METAL CHIP 470 5%	1/16W
R215	1-216-813-11	METAL CHIP 220 5%	1/16W
R303	1-216-841-11	METAL CHIP 47K 5%	1/16W
R304	1-216-841-11	METAL CHIP 47K 5%	1/16W
R306	1-216-841-11	METAL CHIP 47K 5%	1/16W
R307	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R309	1-216-845-11	METAL CHIP 100K 5%	1/16W
R312	1-216-845-11	METAL CHIP 100K 5%	1/16W
R313	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R314	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R401	1-216-811-11	METAL CHIP 150 5%	1/16W
R402	1-216-833-00	RES,CHIP 10K 5%	1/16W
R403	1-216-857-11	METAL CHIP 1M 5%	1/16W (EXCEPT -14)
R405	1-216-174-00	METAL CHIP 100 5%	1/8W (-14)
R405	1-216-809-11	METAL CHIP 100 5%	1/16W (-12/-13)

MAIN

Ref. No.	Part No.	Description			Remark
R406	1-216-174-00	METAL CHIP	100	5%	1/8W (-14)
R406	1-216-813-11	METAL CHIP	220	5%	1/16W (-12/-13)
R408	1-216-843-11	METAL CHIP	68K	5%	1/16W
R409	1-216-861-11	METAL CHIP	2.2M	5%	1/16W
R410	1-216-843-11	METAL CHIP	68K	5%	1/16W
R411	1-216-805-11	METAL CHIP	47	5%	1/16W (-12)
R412	1-216-791-11	METAL CHIP	3.3	5%	1/16W
R413	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R414	1-216-821-11	METAL CHIP	1K	5%	1/16W
R415	1-216-797-11	METAL CHIP	10	5%	1/16W (193)
R416	1-216-311-00	METAL CHIP	6.8	5%	1/10W (193)
R417	1-216-142-00	RES,CHIP	4.7	5%	1/8W (193)
R419	1-216-857-11	METAL CHIP	1M	5%	1/16W
R421	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R422	1-216-805-11	METAL CHIP	47	5%	1/16W (193)
R424	1-216-841-11	METAL CHIP	47K	5%	1/16W
R425	1-216-841-11	METAL CHIP	47K	5%	1/16W
R426	1-216-839-11	METAL CHIP	33K	5%	1/16W
R427	1-216-845-11	METAL CHIP	100K	5%	1/16W (193)
R428	1-216-864-11	METAL CHIP	0	5%	1/16W (193)
R429	1-216-845-11	METAL CHIP	100K	5%	1/16W (193)
R430	1-216-864-11	METAL CHIP	0	5%	1/16W (EXCEPT 193)
R431	1-216-845-11	METAL CHIP	100K	5%	1/16W (193)
R432	1-216-853-11	METAL CHIP	470K	5%	1/16W (193)
R433	1-216-853-11	METAL CHIP	470K	5%	1/16W (193)
R434	1-216-857-11	METAL CHIP	1M	5%	1/16W (193)
R435	1-216-857-11	METAL CHIP	1M	5%	1/16W (193)
R436	1-216-831-11	METAL CHIP	6.8K	5%	1/16W (193)
R437	1-216-815-11	METAL CHIP	330	5%	1/16W (193)
R438	1-216-864-11	METAL CHIP	0	5%	1/16W (EXCEPT 193)
R440	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R441	1-216-799-11	METAL CHIP	15	5%	1/16W
R442	1-216-843-11	METAL CHIP	68K	5%	1/16W
R443	1-216-849-11	METAL CHIP	220K	5%	1/16W
R444	1-216-839-11	METAL CHIP	33K	5%	1/16W
R445	1-216-809-11	METAL CHIP	100	5%	1/16W
R446	1-216-845-11	METAL CHIP	100K	5%	1/16W
R448	1-216-801-11	METAL CHIP	22	5%	1/16W (-12/-13/-14)
R449	1-216-864-11	METAL CHIP	0	5%	1/16W (-12/-13/-14)
R451	1-216-829-11	METAL CHIP	4.7K	5%	1/16W (-13/-14)
R452	1-216-811-11	METAL CHIP	150	5%	1/16W (-13/-14)
R501	1-216-793-11	RES,CHIP	4.7	5%	1/16W
R502	1-216-821-11	METAL CHIP	1K	5%	1/16W
R503	1-216-841-11	METAL CHIP	47K	5%	1/16W
R504	1-216-847-11	METAL CHIP	150K	5%	1/16W
R505	1-216-841-11	METAL CHIP	47K	5%	1/16W (EXCEPT -14)
R506	1-216-841-11	METAL CHIP	47K	5%	1/16W
R507	1-216-847-11	METAL CHIP	150K	5%	1/16W
R508	1-216-857-11	METAL CHIP	1M	5%	1/16W
R509	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R510	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R511	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R512	1-216-843-11	METAL CHIP	68K	5%	1/16W
R513	1-216-833-00	RES,CHIP	10K	5%	1/16W
R514	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R515	1-216-835-11	METAL CHIP	15K	5%	1/16W
R516	1-216-845-11	METAL CHIP	100K	5%	1/16W
R517	1-216-819-11	METAL CHIP	680	5%	1/16W
R519	1-216-851-11	METAL CHIP	330K	5%	1/16W
R520	1-216-853-11	METAL CHIP	470K	5%	1/16W
R521	1-216-845-11	METAL CHIP	100K	5%	1/16W
R522	1-216-855-11	METAL CHIP	680K	5%	1/16W
R523	1-216-829-11	METAL CHIP	4.7K	5%	1/16W (-11/-12-/-13)
R523	1-216-832-11	METAL CHIP	8.2K	5%	1/16W (-14)
R524	1-216-837-11	METAL CHIP	22K	5%	1/16W
R525	1-216-851-11	METAL CHIP	330K	5%	1/16W
R526	1-216-841-11	METAL CHIP	47K	5%	1/16W
R527	1-216-833-00	RES,CHIP	10K	5%	1/16W
R528	1-216-833-00	RES,CHIP	10K	5%	1/16W
R529	1-216-845-11	METAL CHIP	100K	5%	1/16W
R530	1-216-847-11	METAL CHIP	150K	5%	1/16W
R531	1-216-821-11	METAL CHIP	1K	5%	1/16W
R532	1-216-821-11	METAL CHIP	1K	5%	1/16W
R533	1-216-821-11	METAL CHIP	1K	5%	1/16W
R537	1-216-841-11	METAL CHIP	47K	5%	1/16W
R538	1-216-841-11	METAL CHIP	47K	5%	1/16W
R540	1-216-861-11	METAL CHIP	2.2M	5%	1/16W
R542	1-216-864-11	METAL CHIP	0	5%	1/16W
R543	1-216-851-11	METAL CHIP	330K	5%	1/16W
R545	1-216-827-11	METAL CHIP	3.3K	5%	1/16W (EXCEPT -14)
R546	1-216-864-11	METAL CHIP	0	5%	1/16W
R547	1-216-825-11	METAL CHIP	2.2K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R548	1-216-864-11	METAL CHIP	0	5%	1/16W (-12/-13/-14)
R549	1-216-855-11	METAL CHIP	680K	5%	1/16W (-14)
R601	1-216-845-11	METAL CHIP	100K	5%	1/16W
R602	1-216-833-00	RES,CHIP	10K	5%	1/16W
R603	1-216-857-11	METAL CHIP	1M	5%	1/16W
R604	1-216-833-00	RES,CHIP	10K	5%	1/16W
R605	1-216-821-11	METAL CHIP	1K	5%	1/16W
R606	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R609	1-216-833-00	RES,CHIP	10K	5%	1/16W
R611	1-216-833-00	RES,CHIP	10K	5%	1/16W
R612	1-216-833-00	RES,CHIP	10K	5%	1/16W
R613	1-216-845-11	METAL CHIP	100K	5%	1/16W
R614	1-216-833-00	RES,CHIP	10K	5%	1/16W
R622	1-216-841-11	METAL CHIP	47K	5%	1/16W
R623	1-216-863-11	RES,CHIP	3.3M	5%	1/16W (-13/-14)
R802	1-216-809-11	METAL CHIP	100	5%	1/16W
R824	1-218-740-11	METAL CHIP	100K	0.50%	1/16W
R825	1-218-728-11	METAL CHIP	33K	0.50%	1/16W
R826	1-216-841-11	METAL CHIP	47K	5%	1/16W
R827	1-216-853-11	METAL CHIP	470K	5%	1/16W
R828	1-216-864-11	METAL CHIP	0	5%	1/16W
R829	1-216-295-00	SHORT	0		(-13/-14)
R837	1-216-864-11	METAL CHIP	0	5%	1/16W (-14)
R839	1-216-803-11	METAL CHIP	33	5%	1/16W (-14)
		< SWITCH >			
S801	1-692-014-11	SWITCH, KEY BOARD (▶▶I ►)			
S802	1-572-922-11	SWITCH, SLIDE (MEGA BASS)			
S803	1-692-014-11	SWITCH, KEY BOARD (VOL +)			
S804	1-692-014-11	SWITCH, KEY BOARD (VOL –)			
S805	1-692-014-11	SWITCH, KEY BOARD (MENU)			
S806	1-692-014-11	SWITCH, KEY BOARD (■)			
S807	1-692-014-11	SWITCH, KEY BOARD (I◀◀)			
S808	1-762-822-11	SWITCH, PUSH (1 KEY) (OPEN)			
S809	1-572-922-11	SWITCH, SLIDE (HOLD)			
		< TRANSFORMER >			
T401	1-433-560-21	TRANSFORMER, DC/DC CONVERTER			
		< VIBRATOR >			
X801	1-767-366-21	VIBRATOR, CERAMIC (16.9MHz)			

****

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-251-696-11	CONNECTING PACK, CAR (192CK:US,E92)	
⚠	1-467-007-21	ADAPTOR, AC (AC-E455) (191:AUS/192CK:AUS/193:AUS)	
⚠	1-467-009-21	ADAPTOR, AC (AC-E455) (193:US)	
⚠	1-467-012-11	ADAPTOR, AC (AC-E455) (191:EA/192CK:EA/193:EA)	
⚠	1-467-195-11	ADAPTOR, AC (AC-E454) (191:US,CND,E92,MX/191SR:MX/192CK:US,E92/193:US,E92,BR)	
⚠	1-467-550-11	ADAPTOR, AC (AC-E455A) (191:E33/192CK:E33/193:E33)	
⚠	1-473-115-11	ADAPTOR, AC (AC-E455D) (191:UK/191SR:UK/192CK:UK)	
⚠	1-473-116-35	ADAPTOR, AC (AC-E455D) (191:AEP,FR,G,E13,EE/191SR:AEP,FR,G,AR/192CK:AEP,FR,G,E13,EE/193:AEP,UK,FR,G,E13,EE)	
⚠	1-475-622-11	ADAPTOR, AC (AC-E455) (191:CH/191SR:EE/193:CH)	
⚠	1-475-969-11	ADAPTOR, AC (AC-E455) (191:AR/192CK:AR)	
	1-528-939-11	BATTERY PACK (NC-DMAA) (193:E13,E33,E92,EE,AUS,CH,EA)	
	1-528-939-21	BATTERY PACK (NC-DMAA) (193:AEP,UK,FR,G,BR)	
	1-528-939-31	BATTERY PACK (NC-DMAA) (193:US)	
⚠	1-532-433-11	FUSE, GLASS CYLINDRICAL (DIA.5) (1A/125V) (192CK)	
	1-559-906-32	CORD, CONNECTION (190/191:EXCEPT US,CND/192CK:EXCEPT US/193:EXCEPT US)	
⚠	1-569-007-11	ADAPTOR, CONVERSION 2P (191:E33/192CK:E33/193:E33)	
⚠	1-569-008-21	ADAPTOR, CONVERSION 2P (191:E13,EA/192CK:E13,EA/193:E13,EA)	
⚠	1-573-856-11	ADAPTOR, CHANGE (193:BR)	
	1-751-419-11	CORD, CONNECTION (190/191:EXCEPT US/192CK:EXCEPT US/193:EXCEPT US)	
	1-784-619-11	CORD, CAR BATTERY DCC-E2455//M SET (192CK:EXCEPT US,E92)	
	2-201-810-00	TAPE, MAGIC (192CK:EXCEPT E92)	
	3-810-764-21	MANUAL, INSTRUCTION (ENGLISH,FRENCH, GERMAN,DUTCH,ITALIAN,PORTUGUESE) (192CK:AEP,UK,FR,E33,EE,EA,AR,AUS)	
	3-860-270-21	MANUAL, INSTRUCTION (ENGLISH) (191SR:EXCEPT MX)	
	3-865-739-11	MANUAL, INSTRUCTION (SPANISH) (190:AEP,EE/191:AEP,E33,AR,MX/191SR:AEP,AR,MX/192CK:AEP,E33,AR)	
	3-865-739-21	MANUAL, INSTRUCTION (ENGLISH) (190:AEP,UK,FR,EE/191:AEP,UK,FR,E33,EE,AUS,AR,EA,MX/191SR:AEP,UK,FR,EE,AR,MX/192CK:AEP,UK,FR,E33,EE,EA,AR,AUS)	
	3-865-739-31	MANUAL, INSTRUCTION (FRENCH) (190:AEP,FR/191:AEP,FR/191SR:AEP,FR/192CK:AEP,FR)	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

MAIN

Ref. No.	Part No.	Description	Remark
	3-865-739-41	MANUAL, INSTRUCTION (DUTCH) (190:AEP/191:AEP,EE/191SR:AEP,EE/192CK:AEP,EE)	
	3-865-739-51	MANUAL, INSTRUCTION (SWEDISH) (190:AEP/191:AEP/191SR:AEP/192CK:AEP)	
	3-865-739-61	MANUAL, INSTRUCTION (PORTUGUESE) (190:AEP/191:AEP,AR,MX/191SR:AEP,AR,MX/192CK:AEP,AR)	
	3-865-739-71	MANUAL, INSTRUCTION (GERMAN) (190:AEP,G/191:AEP,G/191SR:AEP,G/192CK:AEP,G)	
	3-865-739-81	MANUAL, INSTRUCTION (ITALIAN) (190:AEP/191:AEP/191SR:AEP/192CK:AEP)	
	3-865-739-91	MANUAL, INSTRUCTION (FINNISH) (190:AEP/191:AEP/191SR:AEP/192CK:AEP)	
	3-865-741-11	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (191:E13/192CK:E13)	
	3-865-741-21	MANUAL, INSTRUCTION (ENGLISH) (191:E13,CH/192CK:E13)	
	3-865-741-31	MANUAL, INSTRUCTION (SIMPLIFIED CHINESE) (191:CH)	
	3-865-742-11	MANUAL, INSTRUCTION (RUSSIAN) (190:EE/191:EE/191SR:EE/192CK:EE)	
	3-865-742-21	MANUAL, INSTRUCTION (CZECH) (190:EE/191:EE/191SR:EE/192CK:EE)	
	3-865-742-31	MANUAL, INSTRUCTION (HUNGARIAN) (190:EE/191:EE/191SR:EE/192CK:EE)	
	3-865-742-41	MANUAL, INSTRUCTION (POLISH) (190:EE/191:EE/191SR:EE/192CK:EE)	
	3-865-743-11	MANUAL, INSTRUCTION (SPANISH) (193:AEP,E33,E92)	
	3-865-743-21	MANUAL, INSTRUCTION (ENGLISH) (193:US,AEP,UK,FR,E33,E92,EE,AUS,EA)	
	3-865-743-31	MANUAL, INSTRUCTION (FRENCH) (193:AEP,FR)	
	3-865-743-41	MANUAL, INSTRUCTION (DUTCH) (193:AEP,EE)	
	3-865-743-51	MANUAL, INSTRUCTION (SWEDISH) (193:AEP)	
	3-865-743-61	MANUAL, INSTRUCTION (PORTUGUESE) (193:AEP,E92)	
	3-865-743-71	MANUAL, INSTRUCTION (GERMAN) (193:AEP,G)	
	3-865-743-81	MANUAL, INSTRUCTION (ITALIAN) (193:AEP)	
	3-865-743-91	MANUAL, INSTRUCTION (FINNISH) (193:AEP)	
	3-865-744-11	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (193:E13,BR)	
	3-865-744-21	MANUAL, INSTRUCTION (ENGLISH) (193:E13,BR,CH)	
	3-865-744-31	MANUAL, INSTRUCTION (SIMPLIFIED CHINESE) (193:CH)	
	3-865-745-11	MANUAL, INSTRUCTION (RUSSIAN) (193:EE)	
	3-865-745-21	MANUAL, INSTRUCTION (CZECH) (193:EE)	
	3-865-745-31	MANUAL, INSTRUCTION (HUNGARIAN) (193:EE)	
	3-865-745-41	MANUAL, INSTRUCTION (POLISH) (193:EE)	
	3-867-368-11	MANUAL, INSTRUCTION (SPANISH) (191:E92/192CK:E92)	
	3-867-368-21	MANUAL, INSTRUCTION (ENGLISH) (191:US,CND,E92/192CK:US,E92)	
	3-867-368-31	MANUAL, INSTRUCTION (FRENCH) (191:CND)	
	3-867-368-41	MANUAL, INSTRUCTION (PORTUGUESE) (191:E92/192CK:E92)	
	3-867-369-11	MANUAL, INSTRUCTION (SPANISH) (192CK:E92)	
	3-867-369-21	MANUAL, INSTRUCTION (ENGLISH) (192CK:US,E92)	
	3-867-369-41	MANUAL, INSTRUCTION (PORTUGUESE) (192CK:E92)	
	8-916-813-95	CORD, CAR BATTERY DCC-E2455 SET (192CK:US,E92)	
	8-951-804-94	PACK CPA-7 (192CK:AEP,UK,FR,G,E13,E33,EE,EA,AR,AUS)	
	8-951-814-90	PLATE, MOUNT CPM-401P SET (192CK)	
	8-953-130-90	HEADPHONE MDR-E805LP (190/191:EXCEPT US,CND/191SR/192CK:EXCEPT US/193:EXCEPT US)	
	8-953-342-98	HEADPHONE, STEREO MDR-24 (191:US,CND/192CK:US/193:US)	
	8-988-044-90	SPEAKER SYSTEM SRS-A5 (BLACK) (191SR:AEP,AR,MX)	
	8-988-070-90	SPEAKER SYSTEM SRS-A5S (DARK BLUE) (191SR:AEP,UK,FR,G,EE)	